DOMESTIC ENGINEERING

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Use and Abuse of the Word "Quality" by Manufacturers

QUALITY as applied to goods is now universally accepted as indicating goods of superiority in material and methods of manufacture, although the word literally is susceptible of more than one interpretation. Quality may be good, it may be poor, or it may be mediocre, but the use of the word, especially in advertising and sales talk, is synonomous with merit. Of course the word is frequently dishonestly used. It then means nothing in reality and is a mere empty and high-sounding claim. The word is played upon to deceive buyers who depend on sincerity of purpose in those seeking to impress them with the desirability and reliability of certain goods.

No such claim, however, can have permanence without the actual quality existing in the goods, because all goods are honest and truthful—more so than their makers. They will prove or disprove the claim of quality. They will uphold their makers' integrity and business honor or they will expose him as unworthy of your confidence. Goods must of necessity be honest. They are inanimate objects which cannot dissemble or lie. They will prove their worthiness or unworthiness according to their character no matter what professions, protestations, or promises have been put forth for them.

High quality is therefore demonstrable by use, although the careful buyer may learn through analysis of points that it is a part of the goods, and by exercise of prudence in his choice need run but little danger of a mistake in judgment.

Most important corroborative evidence to a quality claim is the reputation of the men who make it, both in regard to their methods of manufacture, and their methods of dealing with the trade. A conscientious purpose to make goods honestly so that they will uphold a quality claim soon gains recognition from the trade. When this claim is established and is upheld by the goods, the manufacturer has created an asset of immeasurable value to himself.

Favor won on this ground is not easily shaken. A business friendship springs up between buyer and seller which is cemented by confidence and trust. An entente cordiale is established, the stability of which is founded in honesty and square dealing.

While the word "quality" is frequently used unfairly it is still a potent influence when backed up by the goods—that is goods which fight their own way to a favorable verdict after being installed.

A high quality article in our trade should be an easy selling proposition. No user of brass goods, vitreous or enamel ware wants inferior stuff. Every consumer wants the best. He wants goods that will yield satisfactory service, and it's the plumber's place to show him wherein lies the advantage of a high quality article over the one which has absolutely nothing but the price to recommend it.

Real quality in an article is not alone in material, nor yet in workmanship. It goes back of these which are merely contributory causes. It begins with the birth of the thought in the manufacturer's mind to market a class of goods which will faithfully represent his ideals, reflect his good name, and build for him a reputation. This is developed in the drafting room, in the metal, the foundry and so on down the entire line to the salesman, who can truthfully make the quality claim, knowing that the goods will bear him out and that "the house" is back of him. It becomes the ruling passion of the force, it gives them pride in their work and a confidence in the house, which is impossible in any instituton where deception is a part of the policy.

Quality is not then wholly a material element or a component part of goods. It's an exemplification of a manufacturer's ideal, a mute yet eloquent spokesman upholding a well defined purpose, a servitor upon whom the livery of the house will be safe from the stain or taint of dishonest and disreputable trickery.

Real quality in goods is the good character and business reputation of a firm, without which none may hope to retain a position of honor in the trade.

The Hot Water Heating in Highland Park Greenhouse

By Harold L. Alt

One of the latest acquisitions to the city buildings erected in Highland Park at Rochester, N. Y., is the Highland Park Greenhouse which was presented to the city by Miss Mary Starbuck as a memorial in remembrance of her brother Mr. H. B. Lamberton. As Highland Park has been the city's floral show place for many years it was decided to place the greenhouse in this location and competitive designs were called for, the selection being on the basis of what gave the best appearance and finest arrangement for the amount of money available. The design finally adopted was the one submitted by the Lord & Burnham Co., of New York City. The front view of this greenhouse is shown here, being a picture taken at night through the means of the interior electric illumination.

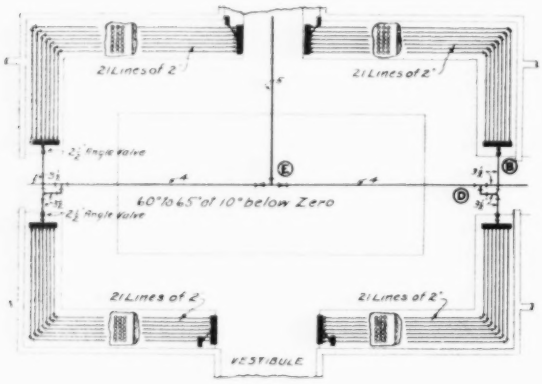


Fig. 1.

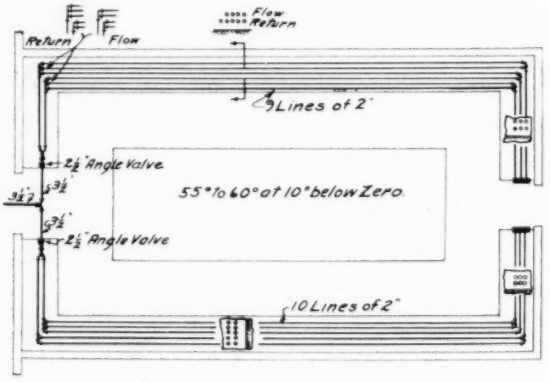


Fig. 2.

Figures 1 to 9 respectively indicate the detail floor plans of the various houses and corridors and hot water piping for all coils; while Fig. 10 shows a small scale general plot plan with the general arrangement of the houses, the corridors connecting them and the designation of each. The location of the pipe coils is well shown in the typical interior view shown in the other photograph.

As can be seen from the general plot plan Fig. 10, the greenhouse consists of six main sections or houses and three connecting corridors. House No. 1 which is the main building and which the visitor immediately enters from the vestibule, is about 34 ft. by 50 ft. and is shown in detail plan in Fig. 1. It has two other houses No. 2 and No. 3 connected with it on either side, both of these houses being approximately 42 ft. x 25 ft. The detail plan of house No. 2 is shown in Fig. 2 and of house No. 3 in Fig. 3. Then passing through connecting corridor No. 1 which is approximately 11 ft. wide and 18 ft. long (being shown in Fig. 7) house No. 6 is entered. This consists of the workroom mainly, together with a woman's toilet and men's toilet with the cellar, coal storage and boiler rooms immediately below.

The layout of the toilet rooms is indicated in Fig. 6 as well as the hot water mains starting off to the various coils and the two 18 inch flues that are walled in and pass up through the woman's toilet. From house No. 6 you pass into house No. 5 (shown in Fig. 5) on one side and house No. 4 (shown in Fig. 4) on the other side through corridor No. 2 (shown in Fig. 8) and corridor No. 3 (shown in Fig. 9) respectively. These corridors are 11 ft. in width and about 25 ft. long, while the houses are each about 18 ft. x 42 ft. In corridor No. 2 is located the propagating bed as indicated in Fig. 8, while the potting benches, pot rack, etc., are located in the workroom of house No. 6. The heating system throughout is of hot water and consists of pipe coils in all sections except house No. 6 where there are hot water radiators installed in the woman's toilet, men's toilet, hall and workroom as shown in plan in Fig. 6. The piping constituting the coils is approximately 2 inches in size and is of guaranteed wrought iron pipe of a quan-

Exterior View Highland Park Greenhouse, Rochester, N. Y., from Photograph Taken at Night.

tity sufficient to maintain the following temperatures inside the houses when the outside temperature is zero; namely:

House No. 1 between .....60 and 65 degrees.
House No. 2 between .....55 and 60 degrees.
House No. 3 between .....55 and 60 degrees.
House No. 4 between .....55 and 60 degrees.
House No. 5 between .....50 and 55 degrees.
House No. 6 at .....60 degrees.
Corridor No. 1 between .....60 and 65 degrees.

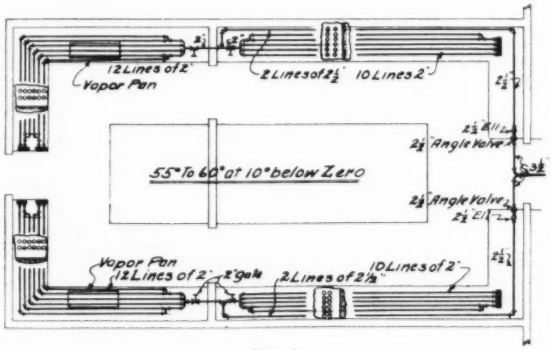


Fig. 3.

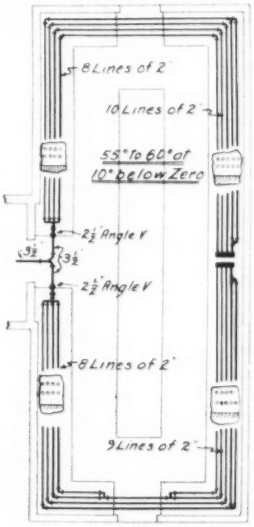


Fig. 4.

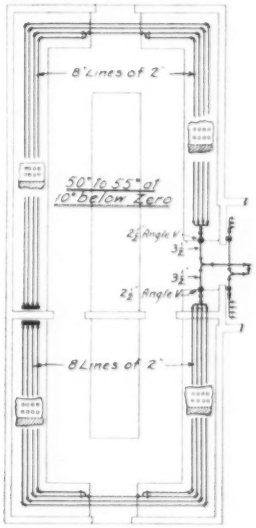
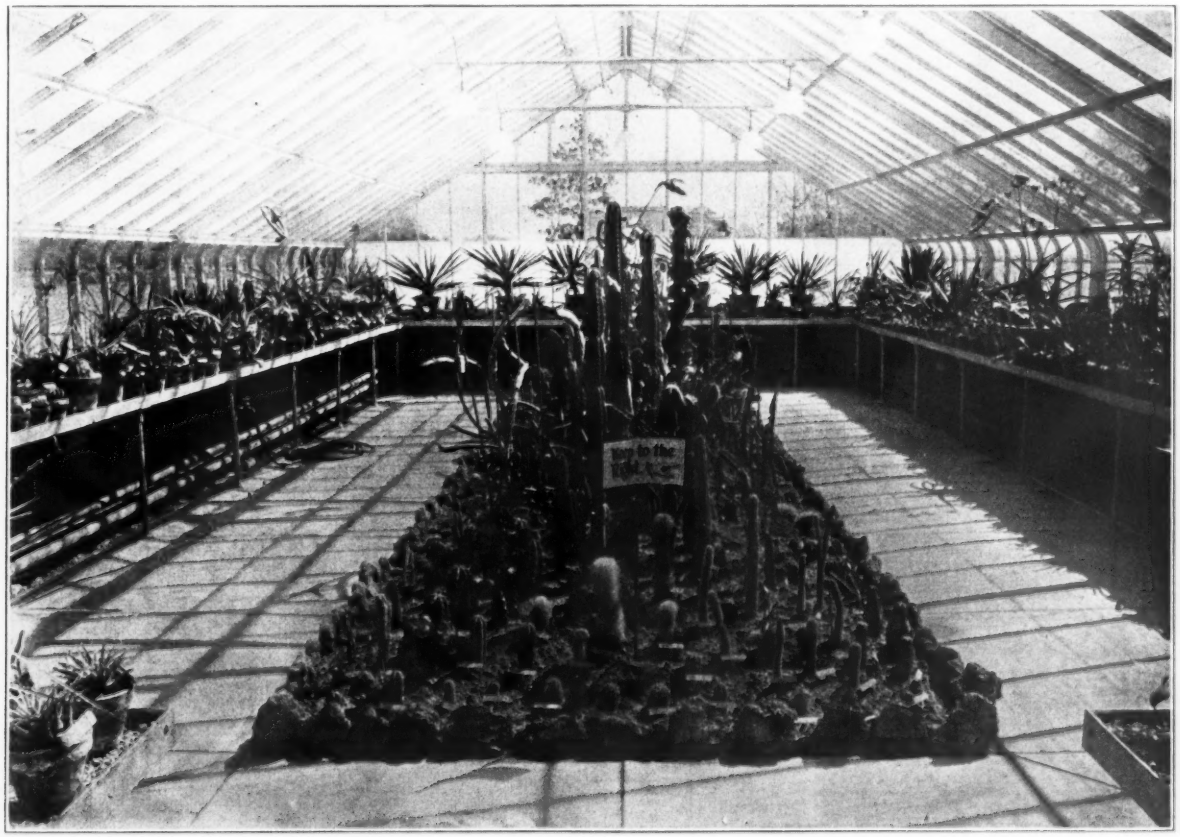


Fig. 5.

Corridor No. 2 between .....65 and 70 degrees.
Corridor No. 3 between .....55 and 60 degrees.

Additional coils are also placed under the propagating bed on the north side of corridor No. 2 for propagating purposes consisting of two 1¼ inch supply pipes and two 1¼ inch returns running the full length of the bed, and 3 inch center to center with 1¼ inch supply branch, with 1¼ inch gate valve and 1¼ inch return branch to the main.

All piping, and fittings used throughout are of the best quality guaranteed wrought iron pipe and cast or malleable iron fittings of standard and special types as



Interior View of Highland Park Greenhouse, Showing Hot Water Piping.

shown in the details. The boilers are two Burnham square sectional hot water boilers of No. W-36-6 and No. W-36-5 size with sufficient combined capacity to maintain the temperatures specified without forcing when using anthracite coal as fuel. These boilers are set over an ash pit 8 inches deep with inclined sides as clearly shown in Fig. 17 and are located in the cellar of house No. 6 as shown in Fig. 11, being connected to the radiators and pipe coils with supply and return mains of the sizes shown, the connections to the radiators **only** being given in Fig. 11 and the mains running to the pipe coils being indicated **separately** on Fig. 12 to avoid confusion.

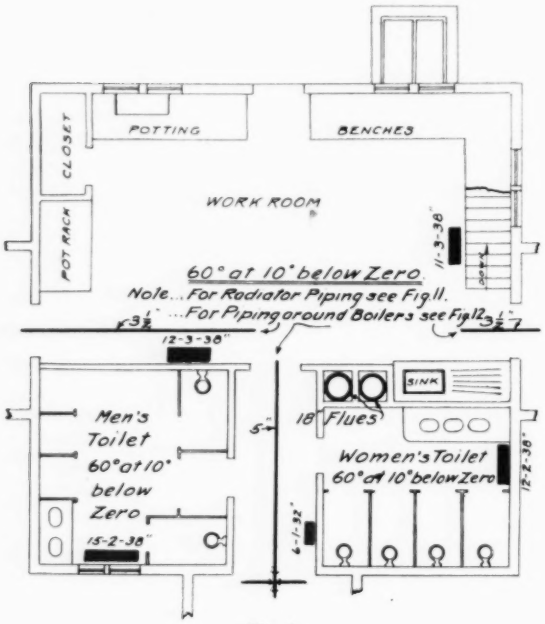


Fig. 6.

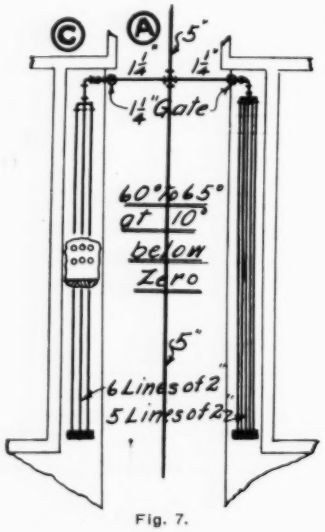


Fig. 7.

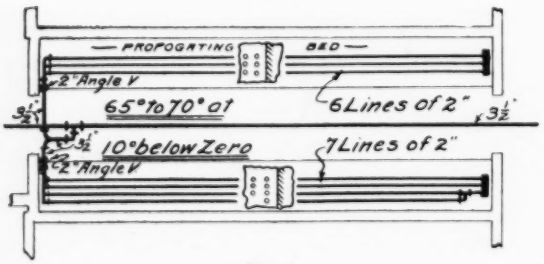


Fig. 8.

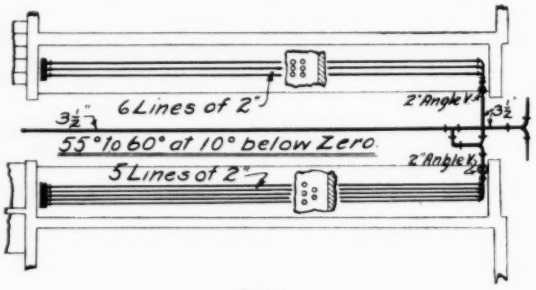


Fig. 9.

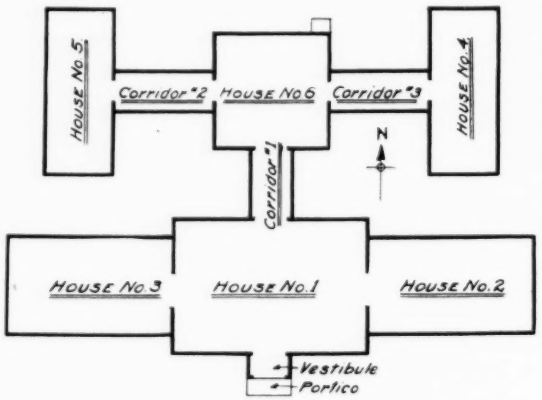


Fig. 10.

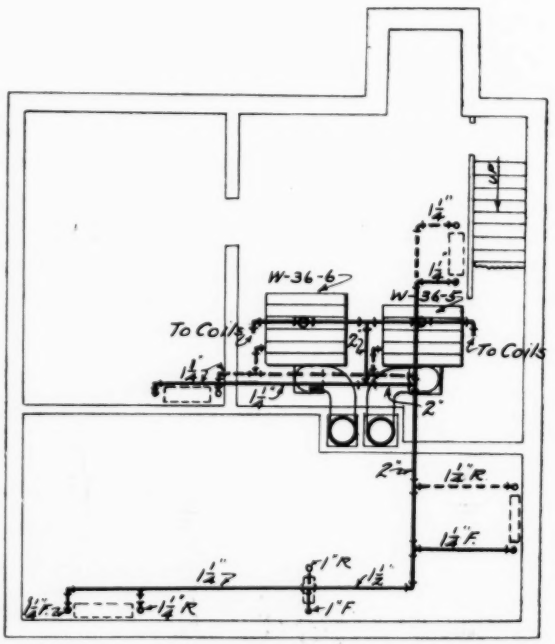


Fig. 11.

A cross section of the House No. 6 and an elevation looking at the front of the boilers (as indicated by line A-A in Fig. 12) is shown in Fig. 13 and an enlarged detail of

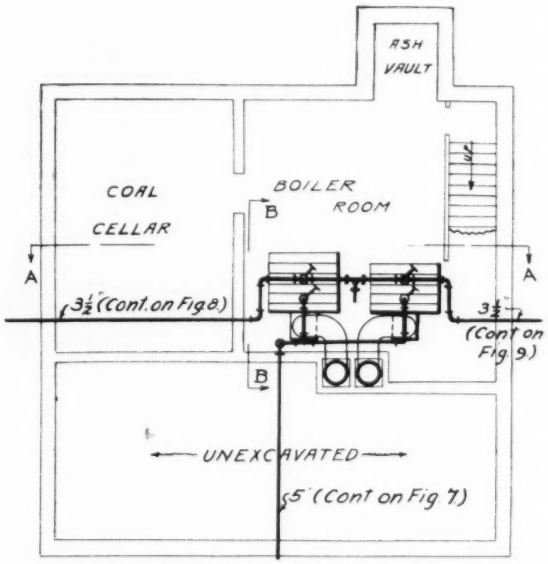


Fig. 12.

the connections around the boilers and the boiler smoke pipe connections as indicated by a view taken on line B-B (Fig. 12) is shown in Fig. 14.

Connection is made to the chimney flue through 16 inch thimbles the flues being of 18 inch diameter and the chimney standing 30 ft. high above the 16 inch thimbles as shown in cross section Fig. No. 13. The pipe mains are all run in trenches and below the floor, rising

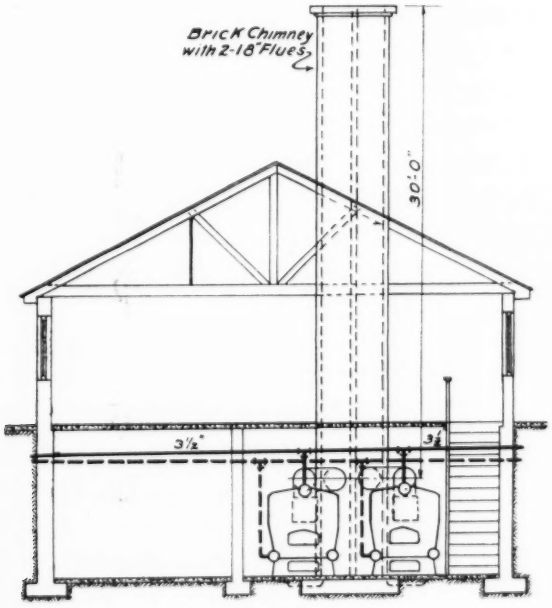


Fig. 13.

up at points where connection is made to the pipe coils with a valve controlling each coil. This is clearly shown both in plan and elevation in Fig. 15. Pipe coils are

constructed of parallel lines of 2 inch pipe in the manner shown on the little cross sections given through each coil and are separated by cast iron chairs which in turn

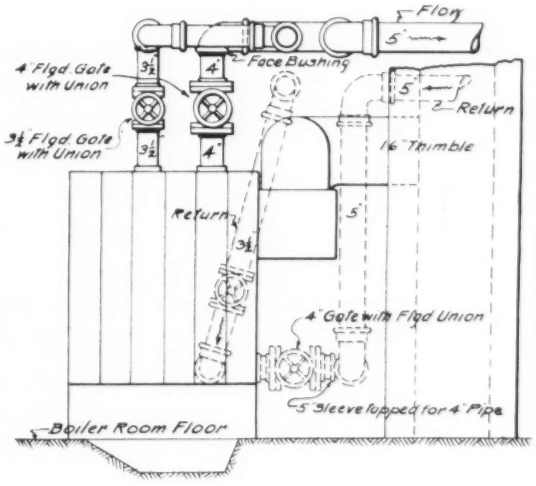
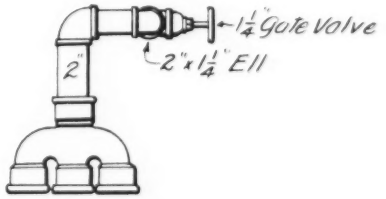


Fig. 14.



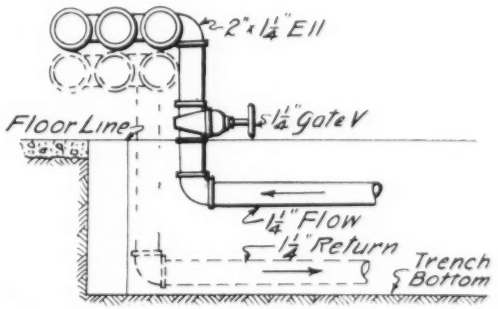


Fig. 15.

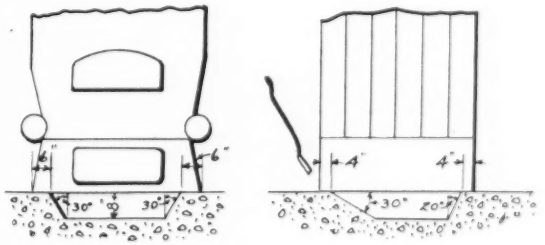


Fig. 17.

rest on concrete piers. The pipes are spaced about 4½ inches on centers each way. The lowest piers under each coil are 4 inches above the grade of the walk unless

otherwise noted and the coils are graded ½ inch in 10 ft. as a rule, air relief being obtained by means of automatic headers at high ends. The mains are pitched 1 inch

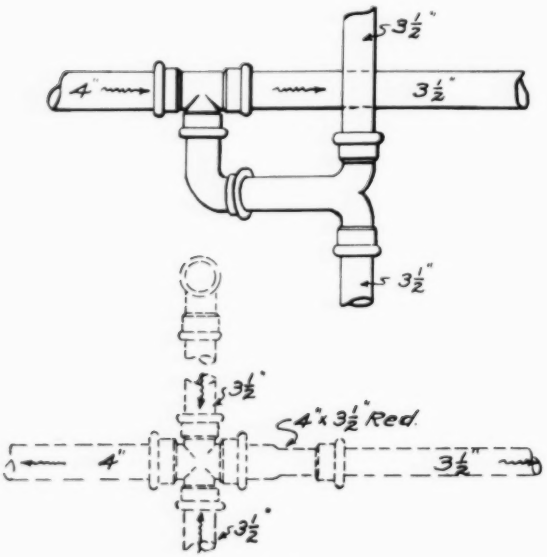


Fig. 16.

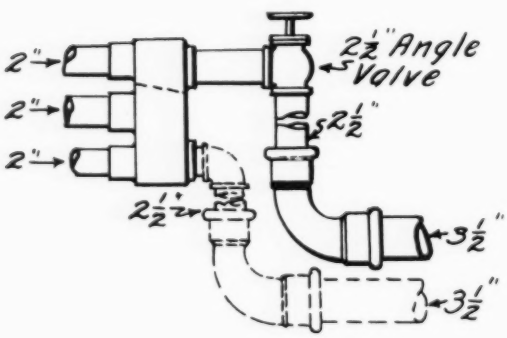


Fig. 18.

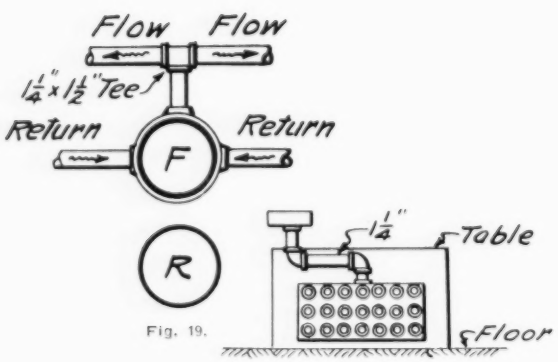


Fig. 19.

Fig. 21.

in 10 ft. which is twice as much as the coils and an expansion tank is placed in house No. 6 at as high a point as possible above the level of radiation. This tank is 27 inches x 27 inches x 27 inches, is connected to the boiler by expansion pipes and in a manner which is clearly indicated in Fig. 23. Two vapor pans with a hot water pipe running through them are located in house No. 3 as shown in Fig. 3. These pans are about 18 inches wide and 4 ft.-0 inch long over all, and about 12 inches

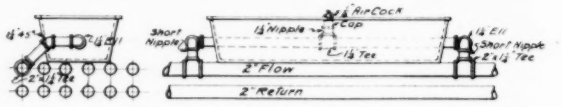


Fig. 20.

wide, and 3 ft.-6 inches long at the bottom on the inside. The pans stand 9 inches high and are made of ⅜ inch cast iron with pipe connections all as clearly indicated in Fig. 20. The coil supplies and returns are started off from the boilers under the floors in three different directions, the line running toward house No. 1 being of 5 inches in size and the two lines toward houses No. 4 and 5 being 3½ inches each. This is indicated in Fig. 6 and following along the 5 inch line we come to corridor

Fig. 22.

No. 1 (Fig. 7) where two 1¼ inch supplies are branched at "A" to supply the coils for this corridor. A detail of the method of branching at "A" is shown in Fig. 19. These branches rise up at "C" (Fig. 7) in the manner shown in Fig. 15. The 5 inch line then continues on down to house No. 1 (Fig. 1) to a point about in the center of house No. 1 where it splits into two 4 inch branches at "E." Fig. 22 indicates how the pipe is run at this point.

The 4 inch branch running toward house No. 2 is

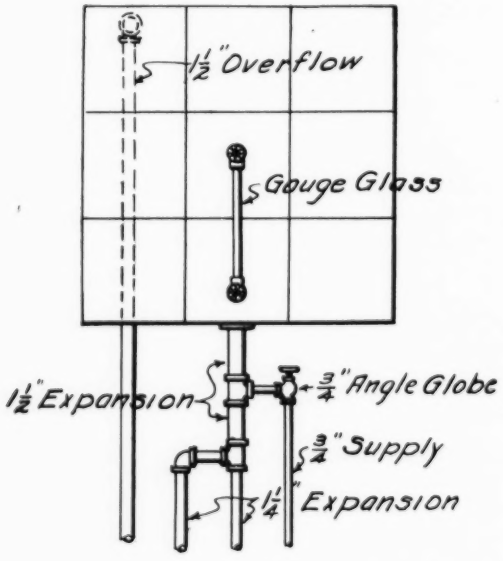


Fig. 23.

branched at "D" to supply two 3½ inch branches running to the coils in the east half of house No. 1. Fig. 16. indicates how this branching is accomplished and Fig. 18 shows how the rise up to the coils is made at "B." At the ends of these coils specials are used which are shown in Fig. 21. From point "D" the main is extended 3½

inches in size to supply two 3½ inch branches (Fig. 2) running to the coils in house No. 2. The 4 inch branch running to house No. 3 (Fig. 3) is quite similar to the one just described with the changes shown on account of there being two sections in house No. 3.

Going back to the boiler the 3½ inch branch which is run to house No. 4 passes through corridor No. 3 (Fig. 9) branching as shown and then into house No. 4 (Fig. 4) where it is connected to the coils. The mains running to house No. 5 pass through corridor No. 2 (Fig. 8) branching as shown and then into house No. 5 (Fig. 5) all connections and branching on both these mains being similar to the details already shown for the 5 inch line and its branches.

IMPORTANCE OF FIGURING COST IN THE PLUMBING BUSINESS.

By Thomas G. Wade.

When there is something the matter with a man's business there is usually something the matter with the man behind that business.

When you figure a job you must add enough to the cost of buying and installing materials to represent your profit and that profit should be a tangible fixed quantity. At the end of the year you should find your average rate of earning on the business done mighty close to the profit you figure on each job. And each job should carry its own proportion of your fixed charges—your overhead, your cost of handling, your dead time.

The first essential to success is the ascertaining of costs. That doesn't mean that the material and labor on Smith's building is your cost. Your cost is represented by innumerable small items which in the aggregate would be a handsome profit each year if you could save them. Since this is obviously impossible they should be borne by each job proportionately.

Suppose you buy an article for $1.00 and decide to sell it at cost, what do you sell it for? That is the basis of the whole thing. Many would say that if you sell it at cost you sell it for $1.00. But it costs you 15 per cent of your sales to do business, viz.: that if you do a business of $100,000 your expenses including rent, light, freight, drayage, license, insurance, bookkeeping, salaries, depreciation and your own compensation will amount to $15,000. Consequently, once this item comes into your possession at $1.00 you must in reselling it at cost get $1.15. If you add 10 per cent profit you must get $1.26.

If your expenditures are $15,000, and you sell it for less you are losing money—not making less than you should—but losing money. You may figure that you don't sell on this basis and still make $5,000 per year. But if you do, it is because you have the brain and the ability to make more than that without the worry and the risk by working for some one else whose cost system is better understood by them.

The prime essential to success is to know your cost. To know when you sell a job what you are making. Having established these cost figures you will be relieved of much of the useless nerve wracking anxiety to which many contractors needlessly subject themselves. You have both feet solidly on the ground. You have the courage and the moral stamina of the man who knows he is right. Your personality becomes stronger—your ability to effect sales better. With the removal of all doubt as to your cost and consequently as to your profit your mind is free to devote to the selling of the job at your price.

Your confidence is bound to be contagious. You can sit down in front of the man who is going to buy and show him that your price is right, commensurate with the right kind of materials, the right kind of workmanship. You can and will make him feel that he'd rather pay you a little more and be sure of what he's getting; and the beautiful part of the whole scheme is that every job is a boost. Jones will tell Smith: "Well, Bill's price is a little high but when I give him the job I know he knows his business and will give me a first-class job."

A buyer can't overlook a high-priced man entirely once that man has driven the idea home that he is a high-class man and his price commensurate with the work which he does. Put your price where you can afford to say "if the job isn't right I'll make it right." Keep on telling your customers about quality goods, quality prices, quality service. The best way to eliminate a competitor is to forget him and think up ways and means not of beating him, but of getting the contract in front of you.

You are pursuing one of two policies—you are either a business builder or you are a business killer and the fact that you may or may not be making money now will not indicate which of the two you are, but down in your heart you know. You know whether you are making good connections, establishing a reputation for the right kind of work, setting the right kind of precedent for the right kind of prices or you know that you are working your head off, shouldering the burdens of a business, making a bare living (perhaps a little more) and staring into a future which offers no reward for hard, probably conscientious but misdirected effort.

Sell your work; sell it at the right price. You can do it. You wouldn't be at the head of your business if you hadn't at some time had the capacity and the courage to step out of the rank and file of the wage earners and embark in that business. Now that you've done it and you're there, keep up the good work. This is not theorizing. This article is for the men who have done things, who have graduated out of the work rooms of somebody else to the head of their own business. The spirit, the courage, the ability that carried you this far is still yours—use it.

Kindness Enough.

Jimpson—I'm gawing to Europe next week. Can I do anything faw you ovaw theah, deah boy?

Gimpson—No, going's enough, thanks.—Town Topics.

His Lesson.

At a country school in England it is said that one of the examiners in a general exercise wrote the word "dozen" on the blackboard, and asked the pupils to each write a sentence containing the word. He was somewhat taken aback to find in one of the papers the following sentence: "I dozen know my lesson."—Harper's.

An Embryo Architect.

A popular conception of the architect's failing in completing a house within the estimate is illustrated in the story of the proud father who thought he discerned great architectural talent in his six-year-old son.

"Why," asked a neighbor, "does he draw well?"

"No," replied the father, "but he started a few days ago to build a hencoop at an estimated cost of 65 cents, and it has already cost me about $3.50."—Exchange.

System Applied to the Plumbing and Heating Business

Paper by W. W. Hughes, Master Plumber, Minneapolis, Minn., Read at the Last Annual Convention of the Minnesota Master Plumbers' Association

I have pondered long and deeply on the subject assigned me, namely, "System," and have arrived at the conclusion that there is but one thing to do and that is to jump right in and endeavor to tell you, in as few words as possible, what I know about the subject.

Noah Webster says that "System" is "an assemblage of things forming a connected whole."

There is no question as to the number and variety of things in the plumbing and heating business, which is all the more reason why "System" should and must prevail to make of the business a success.

I should say that the business should be divided into seven heads, as follows: Buying, Selling, Estimating, Executing, Collecting, Accounting, and Shop Management.

Taking them up separately, we first encounter the Buying, and it should indeed be first, for we must buy before we sell, and to sell right we must buy right. It is one of the first duties which falls upon any man in this business, for after securing the necessary license and renting a store (I mention renting the store because any concern worthy of the name must occupy a store-building and do business on a business basis, instead of catering to the alley-end of the business as do some misguided individuals who attempt to conduct a plumbing business in a vacant stall side of Old Black Joe or in the lean-to formerly occupied by the Plymouth Rocks), he finds in this city a certain gentleman in the Security Bank building who would hold converse with him, that is, of course, assuming that he intends to purchase a certain percentage of his ware from the local jobbers. Accordingly he calls upon the before-mentioned gentleman and is asked divers and sundry questions as to his parentage, his attachment for the flowing bowl, his ability as a joiner of pipes and a wiper of joints (noses not mentioned), his standing with the grocer on the corner, his birthplace, a minute description of his boyhood days with an accounting as to the number of days he skipped school, some few lines as to his apprenticeship and his time in the trade, a few pointed questions as to whether he is a regular old-time party man or a Socialist, whether or not he wears woolen underwear in the summertime and incidentally is requested to show conclusively how much of the world's goods he has laid by for this momentous occasion. If he secures a passing mark on his examination papers from the gentleman, he makes his way to one or more of the various jobbers, with which Minneapolis is blessed in numbers, if not in quality, and proceeds to make certain selections and purchases for the fitting-up of his show-room and stock-room. At this point, it might be well to note that you as a master plumber are the man with the whip hand. The jobbers cannot, neither do they desire to, enter the contracting field, and in this particular they certainly show good sense, for they want sure profits, not the chance profits sought for by the master plumber.

Right here, let me state that you may have a system, or I may have a system, but it takes something besides a system for any business to make good, it takes some hard, hard work; it takes organization and brains; the pyramids would never have been built without system, organization and brains, and that is just what our business needs today, brains, brains, and lots of them! brainy men that understand system, brainy men that have common-sense, brainy men that have organization ability, and brainy men such as excel in all things that go to make other businesses successful. I hold that you men who have started in life equipped with no heritage save that of manhood, industry and common-sense, and who have made good in this your chosen calling, have done more and are a greater credit to the nation than are such men as you all know, it is not necessary to name them, born with gold spoons in their mouths and coming into what should be the prime years of life with their minds and what little brain they have centered upon lust and lust alone. I contend that it takes more brains and common-sense to build up and conduct a $100,000 plumbing and heating business than it does to fill the president's chair of certain well-known corporations.

Personally, the writer has several ideas as to the proper method of buying (which may be open to argument); however, they are as follows: The purchase of all materials possible from local jobbers, and the purchase of the lion's share of it from one particular house. I favor dealing with the local jobbers because I want to do my part towards promoting the welfare of this city; I want to avoid delay and bother incidental to getting material from outside points, and I want to make my purchases at home so as to secure satisfaction in case of defective goods or errors in shipping and delivery. As to the matter of purchasing from one supply house. I have a letter in my desk from one of the largest jobbers in Chicago in which he heartily agrees with me in that statement, with the amendment that he would be better satisfied if we made that one particular jobber his own concern. I hold that by confining your purchases to one house, you become thoroughly acquainted with the various departments and employees of that house; you place yourself in line for a square deal in the matter of credits; you secure the best service in packing and delivery; you are on the preferred list and are promptly advised as to possible market changes; you are given first chance at any bargains that may arise; you are favored from a credit standpoint in case of need; and you are equipped with a club which will guarantee you the best to be had in the way of materials, service, credits and advice.

Selling is an art within itself, and an art much neglected by the plumbing fraternity. The salvation of this business lies in its becoming a mercantile business. When a man sells his wares piece by piece, it is absolutely necessary that he knew their cost; and knowing their cost it is easy for him to add the proper percentage of profit and get it; and a profit thus acquired has no drawbacks, it is not a gambling chance but a sure thing. Sell your wares as quick as you can and do not allow old stock to accumulate; rather sell it at a sacrifice and have the money on hand to do business with than to carry it in stock. I believe in disposing of old material without delay.

Estimating has been the subject of so much discussion that I rather fear butting in on this part of the game, but I will say this, that if a man give due and careful consideration to the items which go to make up a bill of materials and will bear in mind his labor records, he cannot come very far amiss. First of all, know your material-costs; next, know the amount of material required by

"Domestic Engineering" Cartoon on "System in the Plumbing Business."—LXVIII.

System and Hard Work, Backed up by Intelligence, Will Always Bring Success

If you want to possess a special proof of this or any other of our cartoons, let us have your request at once. We have many applications for our cartoons for framing and want to take good care of all demands made.

having checked up some former work, and, lastly, have at your finger tips full and complete knowledge as to the labor-costs on work already done. A card system offers an ideal method of carrying this information, classifying same alphabetically. For street work, it is advisable to use a card system with a division according to the streets and avenues. By so doing, you can readily pick out the cards containing the records of the work on any certain streets and be thus enabled to glean such information as will make it possible to make a reasonable estimate for labor, always bearing in mind that it is policy to leave a little lee-way for the slips that will sometimes occur. Use an itemized form for all estimates; figure carefully; and if there is any question as to the quality of the soil, refuse to make a bid and insist on day-work, bearing in mind that it is much better to lose a possible job than to lose a positive piece of money.

Shop Management means all that the name implies. An ideal shop consists of a well-arranged show-room, carefully stocked with live, up-to-the minute merchandise, not a museum of antiquated hopper bowls, sometime passé foot and sitz baths, antique marble lavatories with decorated basins, not forgetting a goodly collection of dust, dirt and microbes; an office partitioned off from the rest of the store and equipped with safe, desks, filing cabinets and such other essentials as go to make an ideal office for the ready transaction of business; a brass room, under the weather eye of the man in the office, equipped with proper shelving and boxes and cabinets for the storing of the various articles of value which a plumbing shop of necessity must have; a shop, well lighted, properly equipped with cutting-tools, vises, emery-grinder, grindstone, drill-press, bench-scale, fitting boxes and shelving, fitting boxes properly marked as to contents, a yard in which may be stored your stock of soil-pipe, stone-pipe and fittings, wrought-iron pipe, sewer lumber, tool carts, fixture crates, etc., with the further provisions that this yard is best fitted for its purpose when enclosed on three sides and covered over and fitted with electric lights; a wagon-shed and barn connected to and forming a part of above mentioned yard, complete with electric lights, sewer and water connections, and, last but not least, a tool-room, in which are to be kept all of the tools of the business, properly classified and arranged with cabinets for repair parts (and it might be well to add that the cost of good tools is so small that it is folly to waste very much time repairing the old ones; have a scrap pile and don't be afraid to use it). Keep your tool department well supplied so that in case of an emergency you can get a new tool out of stock without having to make a trip to the jobbers. I have found that by using Trimo pipe cutters we always have one or more three-wheeled cutters on hand, as the wheels and rollers for this cutter are interchangeable, making it possible to change from one to the other very quickly. By having a tool-room, you are able to keep a record of your tools and to see that they are returned after being taken out. Given the above equipment as a starter, there is absolutly no reason why everything should not have a place and be kept in that particular place; by so doing you will avoid duplicating stock; you can carry a greater assortment of stock; you will avoid loss of time looking for certain articles and tools; and you will make it possible for a green man to step into your place of business and learn the ropes in jig time. I do not approve of using the basement for a shop nor as a place of storage, as the materials used in a plumbing establishment are too heavy and cumbersome to admit of their being carried first down into the basement and afterwards out of it. In our tool-room, we have taken two pieces of 2x4 and nailed them to the floor and to the ceiling on an angle of about 70 deg., and on these we have screwed two 8-foot lengths of steel hook-plates, such as are used for steam-coil work, and we find that this makes an ideal rack for stocks. In our store-yard, we have made a rack for wrought-iron pipe out of two 12x12 timbers laid on the ground, on which the pipe is placed and each size is kept separate by means of short pieces of 1-inch pipe sunk into the timbers about one foot apart and extending to a height of one foot above the timber. Being right side of the alley and under cover, we find that it is easy to place pipe on it and easy to load pipe from it to our wagon, and by being under cover the pipe is kept free from snow and rain, a merciful provision for the man that has to handle it. A gasoline tank underground is a mighty wise precaution, and the expense to a man in the trade is nominal. In our case we use a 120-gal. range-tank that had started to leak; we soldered same carefully, gave it a week's test under city pressure, and then buried it six feet down, equipped it with a filling-pipe and a pump at a cost of about $5, and are reasonably sure that it will last for many years to come.

Right here, I would add the advisability of having proper toilet facilities for yourself, your employees, your patrons, and the stranger within the city gates. The toilet-room in our shop is used by a number of the business and professional men in our part of the city, and they tell me they appreciate the fact that they have the privilege of its use, together with a lavatory which is connected to both the hot and cold water, supplied with soap and a roll of paper towels. It takes, it is necessary, and it makes business, and in order to promote the further advantages of public-comfort stations we should fall in line and provide such facilities as may be within our power, thereby impressing upon the public in general the convenience and necessity of places of this character.

Executing a contract after securing one is really the vital part of the business and is worthy of a deal of study. I have often likened the plumbing business unto a game of checkers, moving the men hither and thither in an endeavor to reach the king-row of profits. Arrange to have the material on the job ahead of the men; have tools worthy of the name and plenty of them; have the right kind of shop-rules and run the shop according to those rules; arrange to have your men go from one job to the next instead of hiking down to the shop between jobs at an immense loss of time and money; have the right equipment for placing the material on the job instead of using your first-class employees for pack-horses (you might just as well haul coal with a team of carriage horses). Remember, too, that a good repair-man may not be worth a darn on a house-job and vice versa, and that a good man on a house-job may be lost on a contract-job. The plumbing business has its all-around men, but it is rapidly becoming a business of specialists.

Accounting is one of the weak points of our business. We are a class of mechanics instead of being men with business training, and it is the one point to which we should give more time and attention. A school of instruction in connection with this organization would be a grand thing. To begin with, have a well-arranged office, place your desk within an enclosure of some kind, and face it so that they who enter your store will not be able to look over the books and papers on your desk. Keep your statements and bills under cover, instead of hanging them on a hook on the wall, inviting inspection by all who enter. Letter-files are not expensive and are mighty handy. Have a set of books and employ a man of ability to care for them, and they will repay you time and again.

Collecting is treated last, but it is by no means the least. A whole lot of collecting can be done in advance by first

ascertaining a man's credit-standing and refusing him if it is doubtful. A credit-guide issued in this city covers the ground in pretty good shape and should be a part of every man's shop-equipment. After doing a job, bill it immediately and try to collect it while the matter is still alive. You know it is a fact that the man who is most anxious for a plumber on a hurry-up job is usually of very poor memory as to his needs when the bill comes in. Watch the time-limit on the slow ones and file your liens in plenty of time.

As to the books necessary for the proper accounting system, I would say that a whole lote of lee-way may be left right here, as it is absolutely impossible for any one to map out a system applicable to all businesses, nevertheless, the prevailing principles are the same. I use in my own business a loose-leaf ledger (because with it we are able to eliminate the dead timber from time to time); a journal (for various book-keeping transactions); a day-book (in which all jobs are charged, and it might be well to add that some firms avoid the use of a day-book by making out their bills in duplicate and retaining one copy in the office, same being held in a binder for future reference); a check-register (as a matter of taste on the part of the writer, for it is just as easy perhaps to carry the account on the check stubs in the regular journal); a cash-book (the ordinary kind); an estimate-book (itemized after any of the numerous forms to be had); a cost-book and also a system of cards on which to carry certain statistics, and a monthly statement book, drawn up the first of each month and showing the various resources and liabilities and having the additional duty of showing that the books balance absolutely each month.

A system of this kind cannot be handled without a certain amount of work, but, even at that, it will be found to be a source of much knowledge as time goes on. I believe that I omitted a few details on the cost-book. This book is intended to show the cost of the various contract jobs, and can best be handled in conjunction with regular forms drawn up for the purpose, on which may be noted the name and location of the job and a list of the materials sent there, with another column in which is noted the material returned from this particular job, following the checking up of which the balances may be carried into the cost-book and added together, thereby completing a record of incalculable value for future estimating.

I had intended at the start of this essay to be rather brief, but I find that my typewriter has ground out really more than I thought there was in it, but I want to suggest that in my opinion it would be advisable for us to hold a school of instruction along the lines indicated and take up each of the various parts of this paper. There is no doubt but that we have among our own members those who can and will give us some good and valuable pointers for our own good and for the future of the business.

The plumbing and heating business is a progressive science, and we who are so great a part of it must be up and doing. We must each do our own part towards the uplift of the business and not leave it to the president or the secretary of our association to do all the talking and all of the thinking. You were given a dome of thought for some other purpose than that of making it a hat-rack or a garden-plot for hair.

In conclusion, I wish to attempt to impress upon you the value of reading your trade-papers. Take for instance the "Plumbers' Trade Journal" and "Domestic Engineering"; both are mighty good, and both are filled with valuable information, and both have columns in which you may state your views of this business, either its mechanical side, its executive side, its relations with the jobbers, or its relations with the men who carry the tools; and if you are of a combative nature, you can start something in the columns of "Domestic Engineering," either under the head of Business Management or Questions and Answers, that will broaden your views of these two subjects and will also convince you that you are not the only one who has ideas and opinions. I commend both of these papers to you for due and careful consideration.

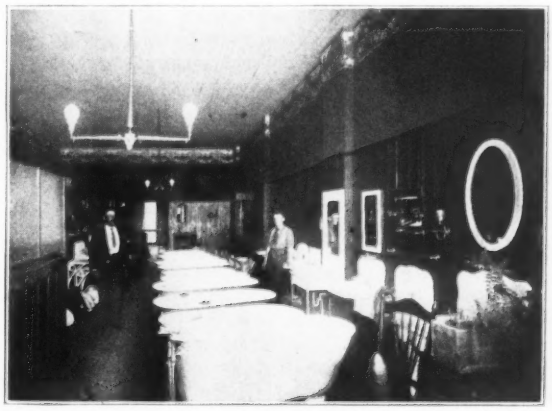
Then, too, there are a number of books dealing with this trade which are of value and they should not only form a part of every master plumber's library, but they deserve reading in that connection. Let me add that books are for use, not decoration, and should be so treated.

The National Association of Master Plumbers publishes each year a book containing a record of its proceedings, and I venture to say that of all you men who get this book not 25 per cent of you ever read it. Gentlemen, it is worth reading, worth reading not only once, but several times, and worth reading with care and study. In it you will meet the gentlemen who head our national association; you will have before you certain essays contributed by master plumbers from various parts of the country, essays dealing with the various problems of the craft and their advancement and the famous "Baltimore Resolutions" and the by-laws of the national association.

Gentlemen, let us get a little more system in our own systems and thereby prepare ourselves for some systematic profits.

BUSY PLUMBING FIRM HAS UP-TO-DATE ESTABLISHMENT.

Shields & Leadley, of Lansing, Mich., are one of the hustling plumbing concerns in that city. They report an unusually busy summer. Among the recent heating contracts on their books are the following: Installation of a heating system in the school building at Hudson, Mich., consideration, $8,000; the Genesee school, Lansing, for $6,500; the First Baptist church, Lansing, price $3,000;



Interior View of Shields & Leadley's Up-to-Date Plumbing Establishment in Lansing, Mich.

Allen Printing Co. building, and the Jackson Printing Co. $1,000 each, both of Lansing; Brooks Rupture Appliance building, Marshall, Mich., $1,500; the remodeled Downey hotel, $5,000; the plumbing and heating system in the city hall at Hillsdale, Mich., and other contracts amounting to about $15,000. The accompanying illustration shows the modernly equipped show room of this enterprising firm.

The Heating and Ventilating of School Houses—II.

By Charles L. Hubbard

Heat Loss from Buildings.

Heat loss from a building is due to two principal causes: first, the transmission through wall and glass surfaces, and second, to leakage around doors and windows and through the walls themselves to a certain extent.

The first of these losses varies with the thickness, construction and material of the wall and the difference between the inside and outside temperatures; while the second depends principally upon the tightness of the building construction and the exposure to wind pressure.

For ordinary brick or wooden walls, of the thickness and construction commonly used in schoolhouse work, the following factors of heat transmission may be used, which also includes glass surfaces of the usual kind found in this class of work.

Table IV.

Material	Difference between inside and outside temp. 60 deg.	70 deg.	80 deg.
Brick or wooden walls	18	20	22
Single windows	75	85	95
Double windows	45	55	65
Double skylight	40	50	60

The factors in the above table represent the heat loss in thermal units per square foot of outside surface per hour.

Example (3). A room has a net outside wall exposure of 700 square feet and a single window surface of 200 square feet. What will be the heat loss per hour due to transmission in zero weather, with an inside temperature of 70 degrees?

Solution—

$700 \times 20 = 14{,}000$

$200 \times 85 = 17{,}000$

Total.....31,000 T. u. per hour.

For a fairly exposed location the following factors may be used for different grades of construction for the losses due to leakage.

Table V.

Grade of Construction.	Multiply the Heat Loss by Transmission by the Following Factor.
Very best	1
Good	1.1
Fair	1.2
Poor	1.3

Example (4). A room has an hourly heat loss of 31,000 T. u. due to transmission. What will be the total heat loss, including leakage, if it is of fair construction?

Solution—$31{,}000 \times 1.2 = 37{,}200$ T. u. per hour.

It has also been found that the point of compass to which a room is exposed makes a difference in the heat loss. A northerly room is less exposed to the warming effects of the sun's rays, and the temperature difference on the two sides of the wall is therefore greater than in a room facing the south, and therefore, the heat loss by transmission is greater. Also the strongest and coldest winds usually come from the North and West, except on the coast, so that the loss by leakage is also greater in rooms subject to this exposure. The factors given in Tables IV and V are for a southerly exposure, and results obtained by their use must be corrected for the points of compass by the factors given in Table VI.

Table VI.

Exposure	Factor
North	1.32
East	1.12
South	1.0
West	1.20
Northeast	1.22
Northwest	1.26
Southeast	1.06
Southwest	1.10
N. E. S. W.	1.16

Example (5). A corner room, 20 ft. x 30 ft. x 10 ft. has the longer side exposed to the North and the shorter to the West. The longer side has three single windows, each 3 ft. x 5 ft., and the shorter side two of the same size. The building is of good construction. What will be the heat loss per hour when the outside temperature is 10 degrees above zero?

Solution—

Longer side. Wall=$10\times30-(3\times5\times3)=255$ sq. ft.
Windows=$3\times5\times3=45$ sq. ft.

Heat loss. $255\times18=4{,}590$
$45\times75=3{,}375$

Total—7,965 T. V.

Factor for leakage—1.1.

Factor for exposure—1.32.

Total corrected heat loss=$7{,}965\times1.1\times1.32=11{,}565$ T. u.

In like manner the heat loss from the shorter side is found to be 7,009 T. u., the only difference in factors being that for exposure. The total heat loss from the room under the conditions of the problem is therefore $11{,}565+7{,}009=18{,}574$ T. u. per hour. In actual work the different exposures are not computed separately as above, but a certain exposure is assumed for the whole room, as Northwest in the example just worked, and a correction factor for this exposure used in computing the total heat loss from the room. If the room is large and there is a good deal of difference between the areas of the two exposures, they may be worked out separately as above described. In figuring the heat loss from an entire building, exposed on all four sides, the factor 1.16, which is the average of N. E. S. W. is used.

In case the building has an unwarmed attic or roof space, the heat loss from the upper floor rooms should be multiplied by 1.1. When steam mains and branches are carried in this space, and left uncovered, this correction may be omitted, as the heat from the pipes will warm the ceiling sufficiently to prevent any additional heat loss.

Methods of Offsetting Heat Loss.

Heat for offsetting that loss by transmission and breakage, as well as for warming the air for ventilation, is furnished by the fuel burned in a furnace, and transmitted to the rooms either by air, steam or hot water, as already described. Most school buildings, except those of the smallest size, are warmed by steam, although hot water, under forced circulation, is now used to a considerable extent in large buildings. In the four systems most frequently used, the managements are as follows: First: Furnace heating, commonly employed in buildings up to four class rooms in size; the entire work being done by means of hot air. Second: indirect gravity steam heat-

ing, for buildings of eight to ten rooms, in which warm air is employed for both ventilation and heating, but it is heated by indirect steam radiators instead of by direct contact with the hot surfaces of the furnace.

Third: in this case the air is forced into the building by a fan, being first warmed to a temperature of 70 degrees by a main heater, so called, and then raised to a still higher degree, as may be required, by means of indirect stacks or secondary heaters placed at the bases of the flues.

Fourth: Same as the above, except direct radiators or coils are placed in the rooms, instead of indirect stacks in the air flues.

The methods of designing these parts of the equipment and of computing the sizes of the same for different conditions will be taken up later under a different head.

Fuel Requirements for Heating and Ventilation.

The fuel required for these purposes for a class room will depend upon a number of local conditions, and must be computed in each particular case.

The method of doing this can best be shown by working a practical example with a set of given conditions, as follows:

Example (6). The heat required by warming a certain room in zero weather, as found by the methods described, is 40,000 T. u. per hour; the room is warmed an average of 9 hours per day for a heating season of 160 days. The average temperature of the entire season is 35 degrees above zero. With coal at $6.00 per ton, and assuming that 7,800 T. u. are utilized from each pound burned under the boilers, what will be the cost of heating the room for a "school year?"

Solution: Total hours warmed, $9 \times 160 = 1{,}440$. If 4,000 T. u. are required per hour in zero weather, only 35/70 of this, or 20,000 T. u., will be required on the average throughout the season, making a total of $20{,}000 \times 1{,}440 = 28{,}800{,}000$ T. u. for the school year.

Pounds of coal required $= 28{,}800{,}000 \div 7{,}800 = 3{,}700$ (approx.), which at $6.00 per ton of 2,000 pounds will cost

$$\frac{3{,}700}{2{,}000} \times 6 = \$11.10$$

The cost of ventilating the same room may be found in a similar manner. Assuming 150,000 T. u. are required per hour in zero weather, and that the fan is run 6 hours per day, the pounds of coal for the season will be

$$\frac{6 \times 160 \times 150{,}000}{2 \times 7{,}800} = 9{,}230, \text{ costing}$$

$$\frac{9{,}230}{2{,}000} \times 6 = \$27.66,$$

making a total for both heating and ventilating of $11.10 + 27.66 = $38.76 for heating and ventilating a single class room under the conditions assumed.

General Equipment.

The item of "furnaces" included under this heading refers to the "hot-air" furnace rather than to the furnace used in connection with a steam boiler. A furnace for school house work is similar to that used for the warming of dwellings, except for the larger ratio between grate and heating surface, and in the larger space for the flow of air between the furnace and the casing. The result sought in this case is to supply a large volume of air at a moderate temperature rather than a smaller amount at a high temperature, where heating alone is of the first importance. In practice it has been found that for school house and similar work the area of the airway noted above should be such that the air velocity will not exceed 400 feet per minute under maximum service. If we count on a heat loss by transmission and leakage of 40,000 T. u. per hour for a standard class room, and an air supply of 72,000 cubic feet per hour, the total heat to be supplied per hour in zero weather will amount to $40{,}000 + (72{,}000 \times 1.3) = 133{,}600$ T. u. Assuming a rate of combustion of 6 pounds of coal per square foot of grate per hour, and a heat value of 7,800 T. u. per pound, the required grate area per class room will amount to

$$\frac{133{,}600}{6 \times 7{,}800} = 2.9 \text{ or}$$

practically 3 square feet per class room. This bears out the common statement that a furnace having a 32-inch round grate (area 5.6 sq. ft.) has sufficient capacity for two standard class rooms.

In the above computation an air supply of 1,800 cubic feet per hour per pupil has been assumed, with 40 desks per room. If a larger air supply is desired the grate area must be increased accordingly. While the ordinary form of furnace with galvanized iron casing may be adapted to this class of work, those requiring a brick setting offer a better opportunity for enlarging the air passages and arranging the mixing dampers.

Boilers.

Probably the horizontal tubular boiler is used more frequently than any other for the heating of school buildings. It is moderate in cost, easily cared for, and when properly designed, is amply safe for the low pressures carried in this class of work. For buildings of comparatively small size, cast-iron sectional boilers are often used, while large city buildings, having their own lighting and power plant, are commonly equipped with water-tube boilers on account of greater safety with the high pressures carried. Sectional boilers of the house heating type are usually rated according to the square feet of grate surface, assuming that under average conditions each square foot will furnish about 60,000 T. u. per hour. Hence, the total number of heat units required per hour for heating and ventilating the building, divided by 60,000, will give the grate area required for boilers of this type. Boilers of the fire-tube and water-tube type are rated on the horse power basis, each boiler horse power representing a capacity of approximately 33,000 heat units per hour, which is commonly taken as 30,000 in heating work. Therefore the total heat units required per hour, divided by 30,000, will give the necessary capacity in horse power.

Example (7). A school building requires a total of 1,800,000 T. u. per hour for both heating and ventilating in zero weather. What should be the total grate area if cast-iron sectional boilers are used, and the horse power if tubular boilers are employed?

Solution: $1{,}800{,}000 \div 60{,}000 = 30$ square feet of grate area for sectional boilers, or $1{,}800{,}000 \div 30{,}000 = 60$ horse power for tubular boilers. It may be stated here that the boiler capacity is always compounded for the coldest weather, and in large buildings at least one spare boiler should be provided for emergencies. Heating boilers of the fire-tube type are commonly rated on a basis of one horse power for each 15 square feet of heating surface, while in water-tube boilers this is reduced to 10 or 11 square feet, on account of the greater proportion of heating surface exposed directly to the fire and to the more rapid circulation of water within the boiler. The maximum rate of combus-

tion in the case of school house boilers is commonly taken as 6 to 8 pounds of coal per square foot of grate per hour, and 8 to 10 pounds for tubular boilers of moderate size, operated under a natural draft. In plants of larger size a combustion of 12 to 15 pounds is often obtained with a chimney of good height.

The rate of evaporation usually runs from 7 to 8 pounds per pound of coal in average heating work with tubular boilers. The required grate area for any given boiler is found by the formula,

$$(3)\ G = \frac{H.\ P. \times 30}{C \times E}, \text{ in which,}$$

G = grate area, in square feet,

H. P. = horse power of boiler,

C = rate of combustion (average value 9),

E = rate of evaporation (average value 7).

Example (8). What should be the grate area for a 50 horse power tubular boiler, to be used for heating purposes in a school building?

$$\text{Solution: } G = \frac{50 \times 30}{9 \times 7} = 24 \text{ square feet,}$$

which corresponds to approximately 0.5 square feet per boiler horse power. In boilers of larger size, with good draft, this may be reduced to about 3.7 for heating work. The area of the smoke pipe between the boiler and chimney should be about one-seventh of that of the grate, if of medium length and fairly direct.

Although the chimney is usually included in the building construction the dimensions are usually determined by the heating engineer. The following table abridged from "Kent's Engineers' Pocket Book" will be found useful for this purpose. A round flue is better than a square one, and is often made of boiler plate and carried up inside a brick shaft.

Table VII.

Diam. of side,	HEIGHT, IN FEET.								
to	50	60	70	80	90	100	110	125	150
inches	Boiler Horsepower.								
18	23	25	27	...	...	...	...	...	...
21	35	38	41	...	...	...	...	...	...
24	49	54	58	62	...	...	...	...	...
27	65	72	78	83	...	...	...	...	...
30	84	92	100	107	113	...	...	...	...
33	...	115	125	133	141	...	...	...	...
36	...	141	152	163	173	182	...	...	...
39	...	...	183	196	208	219	...	...	...
42	...	...	216	231	245	258	271	...	...
48	...	...	...	311	330	348	365	389	...
54	...	...	...	363	427	449	472	503	551
60	...	...	...	505	540	565	593	632	692

Radiation.

This applies to all steam and water heating surface of whatever form, and includes the main heater at the fan, the indirect stacks of various kinds and the direct radiators in the rooms. The main heaters are made up both of wrought-iron pipe, and cast-iron sections and will be taken up in some detail under the head of Design.

The indirect stacks, both for gravity work, and the secondary heaters in connection with a fan system, are usually made up of indirect radiator sections, commonly of the "pin" design. These are made in different forms and sizes for all classes of work and are easily assembled.

Wrought-iron circulation coils along the walls beneath the windows is a favorite form of direct radiation in class rooms, as it is out of the way and distributes the heat evenly. Cast-iron radiators of the sectional type are commonly used in other rooms, with wall radiators in toilets and small rooms where it is desired to keep the floor free.

(To be continued.)

MASTER PLUMBERS IN AUGUSTA, GA., ORGANIZED.

The Board of Directors of the Master Plumbers of Georgia met at Augusta, Ga., September 10th, and after looking after some routine matters organized a branch of the association in Augusta among the local plumbers. Those present at the meeting of the state board of directors were: F. W. Campos, Savannah; A. M. Smith and W. F. Loftus, Atlanta; B. B. Van Houten, Macon; and H. A. Van Borsum, Savannah. Mr. Campos is national vice-president for Georgia. After the business session of the board, the local plumbers were called into the meeting, and an organization was perfected with the following officers: E. J. Erbelding, president; T. G. Brittingham, vice-president; A. S. Hutt, secretary, and T. Miller Morris, treasurer.

AUTOMOBILE OUTING OF THE MASTER PLUMBERS OF PASSAIC, N. J.

On Wednesday, August 28th, the Master Plumbers' Association of Passaic, N. J., enjoyed an automobile trip to Greenwood Lake. The members and their families assembled at the Hobart Trust Building where automobiles awaited them. The party arrived at the lake in good season and did justice to a fine dinner that had been ordered in advance. During the afternoon boat trips were made around the picturesque lake. Sixty persons attended this outing and enjoyed every minute of the day. These outings have proven to be a bond between the master plumbers, creating an increased interest in their organization which has become a power for good in the City of Passaic.

TO TEACH PLUMBING IN THE PUBLIC SCHOOLS OF PASSAIC, N. J.

The Board of Education of Passaic, N. J., is making preparation to start a class in plumbing in the Manual Training Department and has requested the co-operation of the Master Plumbers' Association in this enterprise. The master plumbers have submitted a list of the necessary tools, fixtures and materials needed. The Board of Education has concluded that it is more necessary to equip some boys for expert mechanical work than to train these same boys along lines for which they have no natural inclination; also that the world at large is in need of trained mechanics quite as much as bookkeepers or stenographers. The Passaic Master Plumbers' Association is taking an active interest in this matter and awaits the results with great interest.

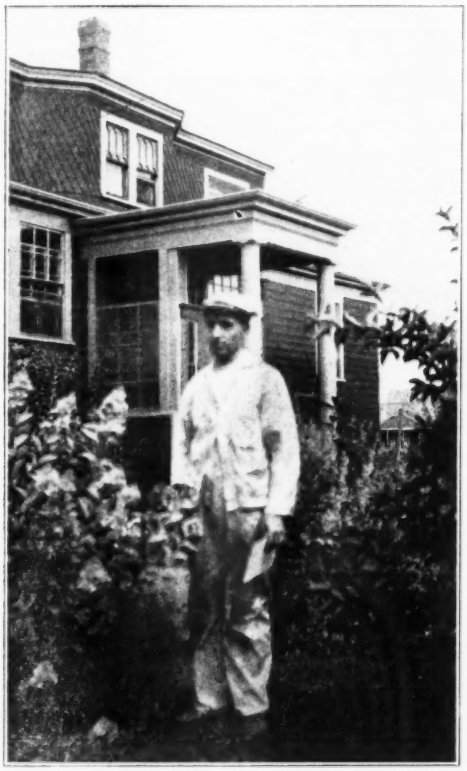
PHILADELPHIA PUBLIC SCHOOLS TO OPEN EVENING PLUMBING CLASSES.

The board of education of Philadelphia announces the opening of its evening trades schools, at Twelfth and Locust Street, and at Howard Street and Girard Avenue, the first term beginning Monday, September 30, 1912. Sessions will be held Monday, Tuesday, Wednesday, Thursday and Friday evenings from 7:30 to 9:30. The chief instructor in the plumbing class is John Bross, assistant chief plumbing inspector. Instruction will be given in shop work and the student will also have the benefit of lectures and study from plumbing text books. Murreil Dobbins, president of the Camden Pottery Co., of Camden, N. J., also city treasurer of Philadelphia, has endowed this institution with five thousand dollars. One

hundred dollars of the interest on this fund to be given annually to be used to further and support such forms of student activities as may be deemed best for the schools, the balance of the income to be used in the purchase of prizes, to be known as the Murrell Dobbins prizes, to be presented to the graduating students ranking first, second and third in each of the schools. The Master Plumbers' Association will award gold watches as follows: One to the student who passes from the B to the C class with the best general average, and one to the student who is graduated from the C class with the highest general average. The city of Philadelphia is to be commended on this effort to develop intelligent workingmen and to promote good citizenship, and it is to be hoped that other cities throughout the country will follow the good example.

A MASSACHUSETTS MASTER PLUMBER AND HIS NEW RESIDENCE.

The accompanying illustration was made from a photograph taken by a representative of "Domestic Engineering," of C. W. Bearsford, Revere, Mass., standing in



C. W. Bearsford and His New Residence at Revere, Mass.

front of his new residence. Mr. Bearsford enjoys a good jobbing trade and has at present a number of large plumbing contracts for apartment houses under way. He states that his business for the year has been unusually good.

Making a Monkey of Him.

"He says he is going to look up his family tree."

"He had better make sure first that there are none of his ancestors swinging up there ready to throw nuts at him."—Boston Post.

AN UP-TO-DATE PLUMBING ESTABLISHMENT.

The building shown herewith is the modern plumbing establishment of E. W. Palmer, 582 Boston Avenue, North Somerville, Mass. This building was designed and erected especially for a plumbing business. The

E. W. Palmer's Establishment at North Somerville, Mass.

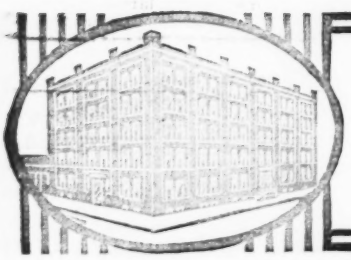
first floor is used for garage, office and show room, and the second floor is used for stock. Mr. Palmer has some nice contracts booked ahead, among which is the installation of over two hundred bath rooms.

A PIONEER PLUMBING ESTABLISHMENT AT DOVER, N. H.

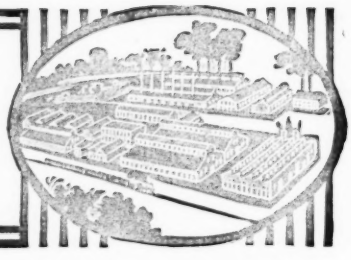
The picture in this column shows a view of the plumbing establishment of John Baty, 44 Locust Street, Dover, N. H., with Mr. Baty standing on the right. For the past thirty-five years Mr. Baty has been engaged in the plumbing business, and has been in his present location

A Pioneer Plumbing and Heating Establishment at Dover, N. H.

for over thirty years. During these years he has seen the place change from a village to a modern city, and he has made the plumbing installations in many of the finest buildings. One of his late contracts is the plumbing in the Dover Point hotel amounting to over $1,000.



News of Interest Among the Wholesalers and Manufacturers



WM. H. GALLISON DEAD.

The death of William H. Gallison, of the Boston Brass Co., 36-40 Oliver Street, Boston, Mass., and president of the plumbing supply concern, also in Boston, that bears his name, has just been announced. His death occurred Thursday, September 5th. Mr. Gallison had many friends in the trade who will regret to hear this sad intelligence.

THE PRATT & CADY CO. IN THE HANDS OF A RECEIVER.

The Pratt & Cady Co., of Hartford, Conn., went into the hands of a receiver on Monday, September 9th, George C. Kimball, of Hartford, being appointed temporary receiver by Judge Marcus H. Holcomb, of the Superior Court. Mr. Kimball's bond was fixed at $100,000. The application for the receivership was made by Amos Whitney and other stockholders.

TO REPRESENT A. S. H. & V. E. AT CONSERVATION CONGRESS.

The following members have been appointed delegates to represent the American Society of Heating and Ventilating Engineers at the Fourth National Conservation Congress, at Indianapolis, Ind., on October 1, 2, 3 and 4, 1912: Samuel R. Lewis, Chicago; N. L. Patterson, Chicago; J. H. Davis, Chicago; Theodore Weinshank, Indianapolis and Joseph G. Hayes also of Indianapolis.

CAMDEN POTTERY COMPANY ENLARGING ITS PLANT.

The increased demand for sanitary vitreous ware in this country is clearly shown by the effect it is having on the Camden Pottery Company's business, at Camden, N. J. While additions have been made recently to this company's plant, it has been found necessary to increase the capacity still more. A new kiln and new pressing shop, measuring 120 x 40 feet, are now under course of construction and these present additions will enable the company to add twenty-five more men to its present force.

SEPTEMBER TOURNAMENT OF THE WESTERN TRADE GOLF ASSOCIATION.

The next monthly tournament of the Western Trade Golf Association will be held Wednesday, September 25th, at Calumet Country Club, Burnside, Ill. Arrangements have been made to take the Illinois Central R. R., on the train leaving Randolph Street station at 8:40 a. m. Luncheon and dinner will be served at the club house, as usual, and the regular meeting and awarding of prizes will be held at the dinner hour. Each member is requested to bring with him a guest who will be eligible for membership in the association, and who will participate in the day's play for the regular prizes but not for the association cup, and the regular charges will be made against the party who brings the guest, or the guest himself, same to be adjusted by the members. As this is probably the last tournament of the year, it is expected that a large number of members will be present.

PARTY OF THIRTEEN ENJOYS SUCCESSFUL TRIP ON FRIDAY THE THIRTEENTH.

On Friday, September 13th, thirteen members of the trade in the Central West, motored to Ft. Wayne, Ind., where they visited the plants of the Knott Mfg. Co. and the Van Arnam Mfg. Co. After an elaborate entertainment in Ft. Wayne, the party continued their journey to Kokomo, Ind., where they inspected the plants of the Great Western Pottery Co. and the Central Closet Manufacturing Co., and were entertained in the evening by the local manufacturing fraternity. The party consisted of the following gentlemen: A. F. Morency, vice-president and secretary, and R. H. Van Buren, president and treasurer, of the Morency-Van Buren Mfg. Co., of Sturgis, Mich.; J. H. Becker, president, Becker Mfg. Co., of Marietta, O.; Chas. McKingston, of the Riverside Foundry Co., of Kalamazoo, Mich.; John Hartman, of the Hartman Ingot Metal Co., of Chicago; D. W. Berry, president, and Geo. Harper, secretary and general manager of the Central Closet Mfg. Co., of Kokomo, Ind.; Henry Newman and C. D. Farr, of Sturgis, Mich.; D. C. Jenkins and O. F. Buck, of Kokomo; George Wood, of the "Plumbers' Trade Journal" and F. P. Keeney, of "Domestic Engineering."

FALL MEETING OF THE NATIONAL ASSOCIATION OF BRASS MANUFACTURERS.

The National Association of Brass Manufacturers held one of its most successful meetings of the year at the King Edward Hotel, Toronto, Canada, on Tuesday and Wednesday, September 10th and 11th. Among the more important matters transacted at the meeting, was the standardizing of the weight of the regular competitive ½-inch I. P. compression bibb, to 13 ounces, to take effect on January 1, 1913. The meeting also adopted 2½ inches as the standard for base of all basin cocks shown in the Official Catalogue, and requested the Commissioner to take up with the manufacturers of the different makes of lavatories, the question of making a standard boss, button or raised part 3 inches in diameter. It was also decided to refer to the meeting to be held in New York City in December, the question of standardizing the thread on all basin cock shanks on January 1, 1913, making them a uniform ½ inch I. P. running thread.

Owing to the strong financial condition of the treasury, the Commissioner was instructed to reward each

member who attends the meeting in New York with the sum of $10.00.

A straw vote taken on the presidential election showed that Taft had a safe majority, with Roosevelt running a comfortable second and Wilson a poor third. It is alleged that the two votes cast for Underwood, were cast by our Canadian friends, owing to their modesty, and not wishing to interfere or mix up in American politics.

It was decided to hold the next meeting, which will be the annual convention, in New York on December 10th and 11th, at which time an annual banquet will be given. A committee consisting of President Ahrens, and Commissioner Webster were appointed to make suitable arrangements for this banquet.

From the standpoint of accomplishments, it was the most successful meeting that has been held for a long time. A poll of the meeting showed that practically all members in attendance were busy, in most cases with business enough to carry them along for some time, with prospects good, and at prices reasonably satisfactory. With the upward tendency of the raw materials in the sheet, rod and tube line, as well as the copper, lead and other metals entering into the manufacture of goods, it was plainly evident that manufacturers had arrived at the time where they could insist upon a reasonable price and fair profit and get it, and it was the general consensus of opinion, as expressed by the individual members, that this can now be accomplished and without any great trouble or difficulty.

Automobiles were provided and very interesting trips made to the Canadian plant of the Standard Sanitary Mfg. Co., and the United Brass & Lead Co., Ltd., on special invitation of President Theodore Ahrens and Fred Sommerville, respectively.

FIRST ANNUAL BANQUET OF PITTSBURGH STEAM SUPPLY SALESMEN.

Plans for the first annual banquet of the Pittsburgh Society of Steam Supply Salesmen have just been announced, the event being scheduled to be held in the Colonial Annex Hotel at Pittsburgh, Pa., on the evening of October 4th at 8:30 o'clock. This will be the first event of the character the Pittsburgh Society has arranged. Arrangements are being made to take care of two hundred guests. The committee in charge of the event is composed of the following: Chairman, J. C. Usher; assistants, C. F. Overly, J. A. Johnson, J. C. Murdock, R. K. Roth and A. E. Cox. New officers of the Society will be elected at the next meeting of the organization which will be held September 28th.

AMERICAN PLUMBING SUPPLIES NEEDED IN MEXICO.

American manufacturers of plumbing supplies are very much interested in the possibilities of a greatly increased business coming from the City of Mexico, Mexico. The municipal government has about completed the construction of a municipal water supply plant, which will give heavy pressure, something that the residents of that city have never before possessed. As a result of this, it is probable that many of the installations in the older houses, particularly, will not stand the new water pressure, and this will result in a large amount of money being spent by property owners there to have modern plumbing goods installed in their houses. As a result of this the plumbing business in Mexico City gives promise of being good for months to come, and a large American export business is expected.

PERSONAL MENTION.

E. S. Aitkin, sales manager of the Trenton Potteries Co., Trenton, N. J., passed through Chicago this week on his way to the Great Northwest, where he is spending his vacation.

* * *

Harry J. Geurink, secretary of the Sanitary Co., Cleveland, O., spent several days in New York City last week, after which he took time to go down to Atlantic City, N. J., for a breath of fresh air.

* * *

E. C. B. Judd, of Muskegon, Mich., called on some of his friends in the New York trade, last week.

* * *

Chas. J. Boyd, of Chicago, ex-president of the National Association of Master Plumbers, has just returned from a pleasure trip to New York and other eastern cities.

* * *

P. M. Murphy, of the Murphy-Keeley Co., 23 East Congress Street, Chicago, is at present visiting friends in New York City.

* * *

J. J. Wade, the well-known master plumber, of Chicago, Ill., is spending a couple of weeks at Atlantic City, N. J., in order to recuperate from his recent illness in Canada. It is expected that he will return to Chicago next week.

* * *

J. G. Lawson, who conducts a plumbing establishment at 4611 North Clark Street, Chicago, was operated on for appendicitis two weeks ago, and he is now on the road to recovery and will soon be able to take full charge of his business.

* * *

Henry Stein, manufacturer's agent, at 48 Cliff Street, New York City, passed through Chicago this week on a visit to some of his western connections. Mr. Stein speaks optimistically of trade conditions in the East. Mr. Stein is a very enthusiastic motorist and the fluency with which he speaks the gasoline language may be attributed to the fact that he has just added a six-cylinder car to his collection of motors.

THE McCRUM-HOWELL CO. TO BE REORGANIZED.

F. H. Moore, treasurer of the International Heater Co., Utica, N. Y., has been elected president of the McCrum-Howell Co., and he will enter upon his new duties as soon as the company has been fully reorganized, according to a press telegram. A board of directors, including bankers, will be elected to insure the conservation of the assets and the proper conduct of the company's financial affairs.

Underwriting for the reorganization has been completed and signed up by a New York banking firm. The formal announcement probably will be made in a few days. Indebtedness of the company stands roundly as follows:

Bank creditors	$2,000,000
Other creditors	500,000
Total	$2,500,000

To deal with this indebtedness the reorganization plan will offer two alternatives. The creditors may either take 25 per cent in cash for the amount of their claims, or 25

per cent in new preferred and 75 per cent in new common stock for the par value of their notes and bills.

It appears, further, that L. G. McCrum, president of the embarrassed company, and George D. Howell have pledged certain of their personal property as collateral notes to the amount of about $200,000, which they individually indorsed. They have deposited the collateral with the First National bank of Pittsburgh under a trusteeship. This collateral will be available for the note indebtedness, and will amount to approximately 8 cents on the dollar. About 90 per cent of the claims against the company are now controlled by the creditors' committee, so that there is no doubt about the plan being carried out. Notices will soon be sent to creditors, officially making to them the offers as outlined.

Capitalization of the new company, as reported this week, will be as follows:

Preferred stock, 7 per cent	$1,500,000
Common stock	3,500,000
Total	$5,000,000

Should all the creditors elect to take new securities, as it is believed they will, the disposition of the stocks will work out about as follows:

Preferred stock.	
Twenty-five per cent of claims	$ 650,000
Remaining for underwriters	850,000
Total	$1,500,000
Common stock.	
Seventy-five per cent of claims	$1,950,000
Bonus to subscribers	850,000
Total	$2,800,000

Leaving for various purposes $700,000 common stock.

The underwriting syndicate has underwritten the entire issue. Stockholders in the old McCrum-Howell company will be given opportunities to subscribe to the $850,000 preferred stock, from the proceeds of the sale of which will be furnished working capital. This stock will be offered to the subscribers at a price below par, and will carry with it 100 per cent in new common stock.

The underwriting syndicate has been arranged for by A. H. Wiggin, chairman of the creditors' committee and president of the Chase National bank of New York.

A NEW BALLCOCK.

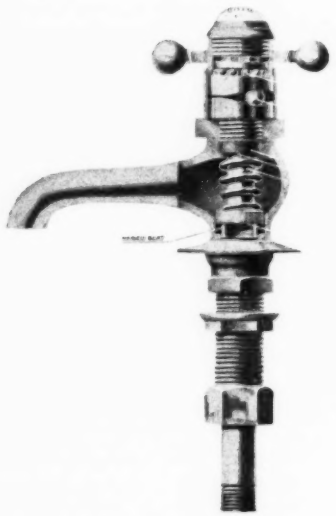
The Twisted Wire & Steel Co., 515-21 Greenwich St., New York, is about ready to place on the market through

The "No-Sete" Ballcock.

all jobbers, the "No-Sete" ballcock, illustrated herewith. The remarkable features of this ballcock are claimed by the manufacturers to be: Extreme simplicity of construction; absence of complicated or breakable parts; nothing to wear out or get out of order; entire absence of a seat; silent and fan-like flow of water when lever is lowered by drop of ball; equal efficiency on high and low pressure. Interesting literature will be mailed to any one upon request to the manufacturers.

THE "BURLINGTON" SELF-CLOSING BASIN COCK.

The Burlington Brass Works, Burlington, Wis., have recently issued a circular featuring their No. 31 self-closing basin cock. One illustration shows a sectional view of this faucet, which is reproduced in this column. The steel and bronze roller bearings add materially to



The "Burlington" Self-Closing Basin Cock.

its wearing qualities. The special features set forth in the circular are: interchangeable index, graphite packing, ground joints, and raised seat encased in rubber washer. The manufacturers claim that the "Burlington" self-closing basin cock is simplicity itself in construction and that it has the fewest possible working parts. Further details can be obtained by writing the Burlington Brass Works.

A NOVEL AND INSTRUCTIVE CATALOGUE.

"Smooth-On Instruction Book, Number 12" is the title of a catalogue recently issued by the Smooth-On Manufacturing Co., Jersey City, N. J. In a clear and concise manner, this catalogue illustrates and describes Smooth-On iron cements, iron paints, sheet packings and corrugated metal gaskets, showing when, where and how to use them. Smooth-On products are made each for a special purpose, and when correctly used they are said to be unequalled for making permanent repairs. They are used for stopping leaks of steam, water, gas or oil; repairing spongy spots in iron castings to make them steam or water tight; repairing cracks in iron or steel castings; repairing flanged joints; making water-tight joints between the ends of steel plates; stopping leaks on inside seams of boilers or tanks where calking is difficult; making permanent joints in the construction of boilers; for rivet cement work on boilers or tanks; smoothing the surface of iron castings; stopping up sand-

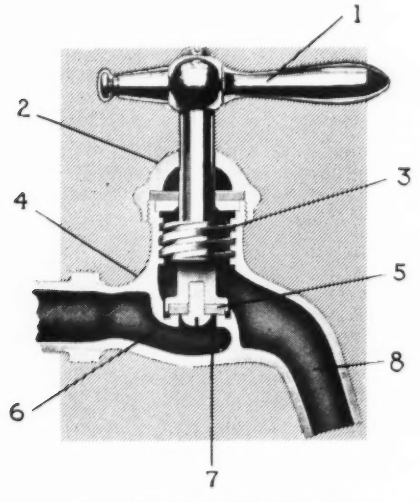
holes; smoothing over "cold short" castings and covering up countersunk bolts, etc. Steam-fitters who have used Smooth-On products say they could not afford to be without them, as they are adapted to a wide variety of uses and are always dependable. The above mentioned booklet is a valuable piece of trade literature and can be obtained free of charge by any of our readers who will address a card to the Smooth-On Mfg. Co.

ISSUES NEAT BOOKLET.

Jas. M. Teahen, 171-191 Beecher Avenue, Detroit, Mich., is sending to his customers a nicely gotten up pamphlet printed in two colors, entitled, "A Few Letters of Credit." The frontispiece contains a halftone engraving of the plant, "The Home of Vitro Tanks." In its pages are facsimile reproductions of many letters received from plumbing concerns extolling the merits of Vitro tanks and seats. The booklet also illustrates different types of Vitro "No Trouble" combinations. Mr. Teahen will mail a copy of this booklet to interested parties upon application.

QUICK-PRESSION WORK THAT MEETS WITH FAVOR.

The Central Brass Mfg. Co., of Cleveland, O., reports a very definite increase in sales on quick-pression work for the current year. The company attributes this increased business to the fact that its complete line of quick-pression work combines attractive and graceful designs with a unique and unfailing serviceability; that it combines the positive seat of compression work with the quick action of fuller work, and yet it completely eliminates the troubles often found in these two types of brass goods; that it is a line of brass goods which neither thumps nor pounds, and that a quarter turn will give full flow. The accompanying illustration features the Central

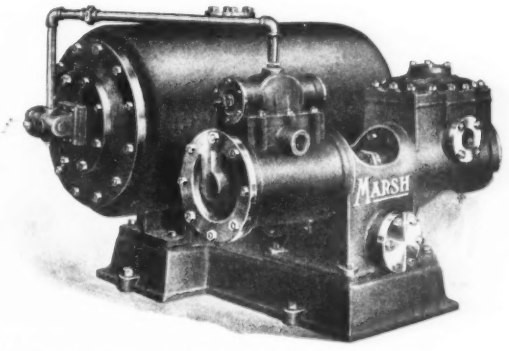


The "Quick-Pression" Faucet.

Brass Mfg. Co's. quick-pression faucet, the key being as follows: 1. Opens to a free flow and closes with a quarter-turn of the handle. 2. Combined Cap-nut and stuffing-box—no leaking around stem. 3. Threads quick acting—engaging their whole length. 4. Entire bibb cast of all new metals—no scrap. 5. Seat-washer encased in brass wall to prevent spreading. 6. Full even water way. 7. Seat cut from thick metal wall, raised high and perfectly machined. 8. Spout cast at angle to prevent splashing and insure convenient filling of utensils. Descriptive literature and full details will be furnished to any one upon request to the manufacturers.

THE MARSH IMPROVED AUTOMATIC FEED PUMP AND RECEIVER.

The American Steam Pump Co., of Battle Creek, Mich., has recently placed an improved governor valve on its line of Marsh automatic feed pumps and receivers which is attracting considerable attention among heating engineers and heating contractors generally. As shown by the illustration, the automatic valve is placed at the end of the receiver tank instead of at the top as formerly and consists of an ingenious arrangement of a semi-rotative balanced valve. This valve is said to have the de-



The Marsh Improved Automatic Feed Pump and Receiver.

cided advantage of always wearing to a perfect seat instead of being constructed in the usual manner wherein the wear tends to produce not only leakage but sticking both on the seat and off, either of which would prevent the automatic operation of the device. The extreme simplicity of the valve makes it practically impossible for it to get out of order and as the governor valve is usually the first part of this type of pump to show wear, the improvement will undoubtedly be appreciated by those who have occasion to use this type of apparatus in returning the condensation from their heating systems directly to the boiler. The above company makes a specialty of pumps for heating systems and its lines of Marsh vacuum pumps and Marsh automatic feed pumps and receivers deserve to be known by heating concerns throughout the country. Those who are not acquainted with these lines can secure descriptive literature by applying to the American Steam Pump Co.

ISSUES INTERESTING AND INSTRUCTIVE CATALOGUE.

A most interesting and instructive booklet entitled "Modern Welded Pipe" has just been issued by the National Tube Co., Pittsburg, Pa. This book is compiled in the nature of a brief history illustrating the progressive operations from ore to finished product. Information on the processes of manufacture, properties and characteristics of the metal from which pipe is made, is given in a style as free from technical detail as possible, each process accompanied by illustrations. First, the mining of the ore is dealt with, then the processes of extracting the metal from the ore are explained in a comprehensive manner. One illustration shows the blast furnace where the

raw material is treated and made into pig iron. The successive processes of refining and converting the pig iron into solid blocks, or ingots, are illustrated and described. Next comes the manufacture of pipe. An insert in the center of the booklet illustrates the old and the new processes of the manufacture of pipe. The reader will find this history of the industry most instructive. Particular attention is called to that section of the catalogue relative to pipe threading dies, also to that section on the corrosion of pipe and tubes. This catalogue should be of special interest to all users of tubular goods and will be sent to any one upon request to the National Tube Co.

ISSUES NEW CATALOGUE.

The Mahoney Fountain Co., 491 Fore Street, Portland, Maine, has just issued a new catalogue showing different types of the Mahoney sanitary drinking fountain attached to ordinary basin or wash bowl, and to sink. This fountain is made to attach to any style of bowl, sink or pedestal and is adapted for use in schools, public buildings, etc. The manufacturers were recently pleasantly surprised by receiving a good-sized order for these fountains from San Juan, Porto Rico. Interested parties can secure a copy of the new booklet by addressing the manufacturers.

GOVERNMENT CONTRACTS TO BE AWARDED.

Supervising Architect, Oscar Wenderoth, Treasury Department, Washington, D. C., will receive sealed proposals as follows:

Until 3 p. m., on October 1, 1912, for the extension, remodeling, etc. (including plumbing, gas piping, heating apparatus, electric conduits and wiring, and interior lighting fixtures), of the United States post office and courthouse at Raleigh, N. C. The work contemplated is the construction of a three-story, basement, and unfinished attic extension, of approximately 6,300 square feet ground area. The first floor only is fireproof construction; exterior facing is of stone, and there will be certain alterations in the present building.

Until 3 p. m., on October 21, 1912, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring and interior lighting fixtures) of the United States post office at Moorhead, Minn. The building is to be one story and basement, approximately 4,100 square feet ground area, brick faced, with wood, terra cotta, stucco and stone trimmings, tin roof and non-fireproof constructon except the first floor.

Until 3 p. m., on October 22, 1912, for the construction complete, of the buildings for the United States quarantine station, San Juan, P. R., consisting of five one-story buildings, having a total ground area of approximately 11,500 square feet, with brick walls and stucco facing, concrete floors, and corrugated-iron roof covering.

Until 3 p. m., on October 29, 1912, for the construction, complete (including plumbing, gas piping, heating apparatus, electric conduits and wiring, and interior lighting fixtures and approaches), of the United States post office at Elberton, Ga. The building is one-story, basement and mezzanine at both sides, and has a ground area of approximately 3,600 square feet, non-fireproof construction, stone, brick, and stucco facing, terra cotta cornice, and tin roof.

All proposals should be in accordance with drawings and specifications, copies of which may be obtained from the custodians of the above sites, or from the Supervising Architect at Washington, D. C.

THE METAL MARKET

A STRONG MARKET FOR IRON.

Consumers of finished steel products continue to buy all kinds of steel with great liberality; this has resulted in a continued large inquiry for pig iron and some new high prices have been named. In Pittsburgh No. 2 foundry iron for first quarter delivery has sold at $16.40, which is equivalent to $15.50 in the valley; the same grade of iron for fourth quarter delivery is 75 cents a ton cheaper.

Some of the cast iron pipe makers are in the market for 10,000 tons of foundry iron. A new high price has been named on Southern foundry which is now $13.80 at furnace for first quarter delivery, at this price at least one round lot of 15,000 tons has been sold. Northern furnace interests are also holding iron for higher prices and there seems to be little doubt that quotations for 1913 will be from one to two dollars higher than those ruling at present.

TIN AT RECORD PRICES.

A five-ton lot of tin was sold in New York at 49¾ cents. This establishes a new high record for lots of this size, earlier in the week a sale of a small lot was made at about the same figure and in 1906 there were a number of lots sold at around 49 cents, but this is the first time there has been any authentic record of a lot of this size selling for so high a price.

THE OLD METAL MARKET.

Dealers' buying prices in New York are:

Light copper	$13.50@	14.00
Strictly crucible copper	15.50	15.75
Uncrucibled heavy copper	15.00	15.25
Uncrucibled copper wire	15.00	15.37½
No. 1 machine composition	12.25	12.50
No. 1 brass turnings	9.00	9.37½
New brass clippings	11.00	11.12½
No. 1 comp. turnings	12.00	12.12½
Cocks and faucets	10.25	10.50
Light brass	7.37½	7.62½
Heavy lead	4.40	4.45
Tea lead	4.05	4.25
Scrap zinc	5.37½	5.50
No. 1 pewter	31.50	32.50
No. 2 pewter	9.50	11.00
Close cut solder joints	8.75	9.25

OBITUARY.

Stephen Bryce.

Stephen Bryce, founder of the Bryce Heating & Ventilating Co., Toledo, O., died at his home in that city on Monday evening, September 9th, in his 73rd year. He was a veteran of the Civil war, and he is survived by eight children.

Paul J. Wendt.

Paul J. Wendt, of the plumbing firm of Wendt & Enright, 802 Jefferson Street, Chicago, died at his home in this city on Sunday, September 8th, after a year's illness. He was a member of the Chicago Master Plumbers' Association, and he had many friends who regret his untimely demise; he was only 38 years old. He leaves a wife, two children and several brothers.

Among the Plumbing and Heating Contractors

NEWS FROM NEW ENGLAND.

Massachusetts.

Pittsfield.—The school committee has received bids and awarded contracts for the new William L. Adam School, the plumbing to L. J. Sullivan & Co. for $5,495, and the heating and ventilating to the Robbins' Gamwell Co. for $10,300. The bids for this work were as follows: Plumbing: J. J. Sullivan & Co., $5,495; W. B. Backus & Son, $5,500; Nolan & Hebert, $6,500; Nohle, Milne Co., $6,998; H. L. Doran & Co., $7,375. Heating and Ventilating: Robbins, Gamwell Co., $10,300; Daniel Farrell & Co., $10,666.

Medford.—A contract for heating and ventilating the high school building has been awarded to Huey Brothers, the lowest bidders, for $23,847.

Westfield.—W. M. and W. E. Ahern have been given the contract for the plumbing work in the new post office building. The firm also has a contract for plumbing the new Columbus building on Elm street.

Worcester.—John Sullivan, the Lincoln Square plumber, is to erect a brick apartment block at 11 Lincoln Street in the near future. It will be four stories in height and contain eight six-room apartments.

Gardner.—Joseph H. Maguire has been awarded the contract for plumbing at the new Synagogue on Pleasant Street, and also a contract for plumbing and heating the residence of George Mather at Whitmanville.

Marblehead.—Arthur J. Sanford, of this town, has been given the contract for heating and ventilating a new theater building at Wakefield. Mr. Sanford also has in hand or just completed contracts for heating and plumbing in the residences of Charles A. Slee, Edgar Welsh, Nathaniel C. Lyon and Herbert Humprey. He has also recently furnished 15 heaters for houses in Salem, Mass.

Palmer.—F. W. Simons, plumber, is to have quarters in the new block being erected on North Street by John Wilson.

Stockbridge.—F. A. Buck is to have a hot water heating system installed in his store and has placed the contract with H. B. Parsons.

Boston.—Secretary of State Langtry has granted a charter to the P. J. Sullivan Co., plumbers, of this city. The new corporation is made up of Patrick J. Sullivan, Alice G. Sullivan and Nellie A. Pigott. The capital is placed at $10,000.

Newburyport.—John Muldoon & Son have purchased the furnace repairing and manufacturing business of the Ordway Heating Co., and will locate at 44 Merrimac Street. Mr. Muldoon has been associated with Mr. Ordway for seven years and has followed the trade for 42 years.

Maine.

Bangor.—Wiley & Calhoun, of Portland; the Isaac Coffin Co., and Huey Bros., both of Boston, were the bidders on the proposed Central heating plant at the high school. The contract has not been awarded. Wiley & Calhoun bid $13,000, Coffin $14,314 and Huey Bros. $15,517.

Oldtown.—Fred C. Park has the contract for the plumbing of a new house in Webster, the heating and lighting in a house for James McNulty, and several other good contracts in hand.

Portland.—Bids are now being taken for the plumbing, heating and ventilating on the addition to the high school building, also on the new police station being erected on Federal street, this building to cost $75,000.

Portland.—C. M. & H. T. Plummer, 48 Union Street, dealers in plumbers' supplies, have recently made extensive changes in their building, having remodeled the front so as to give them a modern show room and well lighted offices. The show room will be equipped with all the latest designs in high grade plumbing goods. This firm has the distinction of being the oldest in the supply business East of Boston. They report a very busy season.

Portland.—Myers & Mahoney, 73 Union Street, have a number of good contracts under way, among which are the installation of the plumbing in the new Sisters' convent at Dover, N. H., and a complete plumbing system in the summer residence of J. H. Watson, Parsonville, Me.

Connecticut.

Bridgeport.—The Bridgeport Water Heater Co. has a contract for the plumbing and heating of a new house on Park Avenue for R. W. Barnes.

Hartford.—J. B. Britton has the contract for plumbing a new garage for A. B. Wilson & Co.

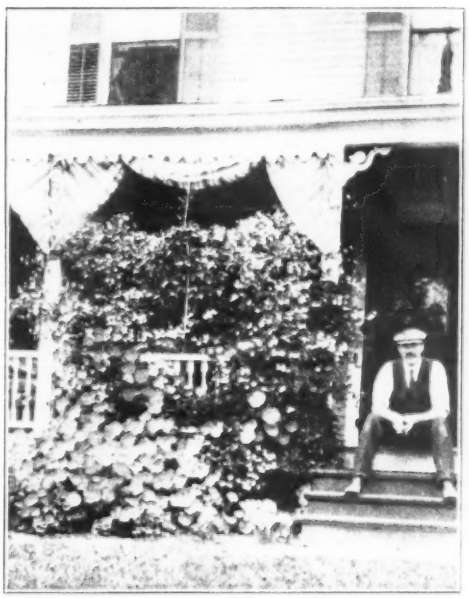
Norfolk.—Thomas O'Connell, of the plumbing firm of O'Connell & Kennelly, was painfully injured when an iron filing from a piece of pipe on which he was working flew into his eye, piercing the iris. An operation was performed at the Hartford hospital, but it is thought that he will lose the sight of the eye.

Rhode Island.

Woonsocket.—Frank P. O'Donnell, until recently inspector of plumbing, has been awarded the contract for extensive plumbing and heating work in a new house for William Chase on Glen Road.

A MAINE MASTER PLUMBER AT HOME.

We reproduce herewith a photograph of E. F. Knight, of Portland, Me., taken at his residence. Mr. Knight is



E. F. Knight, of Portland, Me., on His Doorstep.

one of the progressive and successful plumbers of Portland who believes in figuring a fair profit on all work. He reports a satisfactory season and has some good contracts on hand.

NEWS FROM PHILADELPHIA.

W. W. Frey, 7703 Ridge Avenue, will install plumbing in 5 new houses for M. Swarthley at 343 to 361 Hermitage Street.

R. A. Needham, corner Church and Frankford Avenues, will install drainage systems in 10 houses for Jos. Siever at Tacony and Margaret Streets.

J. Glanzler, 2021 S. 8th Street, has the contract for plumbing in property, 508 Tasker Street, for Mark Kellar.

S. Faith & Co., 2427 Pennsylvania Avenue, will do the plumbing at property 12th and Quarry Streets for Jas. Young.

Samuel Philipps, 3961 N. 5th Street, has the contract for plumbing in 15 houses at Ella and Louden Streets for C. W. McClay.

Thos. H. Beamer, 5701 Pine Street, has been awarded the contract for plumbing in 4 new houses at 57th Street and Thomas Avenue for Robert Patton.

H. Cottin, Jr., 5040 Baltimore Avenue, will install the plumbing in the residence of J. H. Billington at 64th and Church Road.

Odgers Bros., 1320 Poplar Street, have the following contract for plumbing on hand: 1409-32 Chadwick Street.

H. L. David, 1343 Westmoreland Street, has the contract for plumbing in 18 houses, 600 to 634 Chen Street for K. T. Cressman.

J. J. Donahue, 2403 S. Broad Street, will install drainage systems at 1817-31 Morris Street for M. Vollmer.

J. E. Evanson & Son, 207 S. 10th Street, have been awarded the contract for plumbing in the building 21st and Lappincott Streets for Steele Heedle Co.

Geo. B. Cairnes, 1615 Federal Street, will install drainage systems in 7 houses, 1522 to 34 S. Hicks Street for Jos. Leedom.

W. J. Robinson, 6202 Germantown Avenue, has the contract for plumbing in 18 houses at Durham Street and Cresheim Road, for Robt. Pillough.

L. J. Sommer & Son, 2436 Brown Street, will make additions and alterations to the plumbing in 4 houses, 1518-24 Seybert Street for M. Stutzbach.

Geo. W. Gamble, 3130 Richmond Street, will install drainage systems at 2914-16 Edgemont Street.

Jos. C. Kohn, 812 South Street, has the following contracts on hand for plumbing: 621 Mercer Street; 305 Pemberton Street; 310 Monroe Street.

M. V. Kellewell, 28 S. 40th Street, will install plumbing in the following properties: 39 Sloan Street; 3951-3953 Ludlow Street; 1424 Bainbridge Street.

NEWS FROM MICHIGAN.

Flint, Mich.—Edwin Sterner & Co., of this city, have been awarded the following contracts: Installation of plumbing and heating system in the Harrison Street school; plumbing fixtures in the school for the deaf, in this city, amount about $2,000; plumbing and heating system in the new pumping station for water filtration, consideration $3,000, and other heating and plumbing contracts amounting to about $10,000.

Saginaw, Mich.—H. C. Cannon, 209 N. Franklin Street, has secured the plumbing contract for the Schmelzer furniture building, at a figure of $1,000. Mr. Cannon also has on hand heating and plumbing contracts for twenty-four apartments, amounting to about $13,000, as well as several other contracts that will amount to over $15,000.

Saginaw, Mich.—Kaiser & Racuth, of this city, successors to the H. Ford Plumbing Co., have been awarded the heating contract for the country club, also the plumbing in the Jerome school at a price of $1,000.

NEWS FROM THE PACIFIC COAST.

San Francisco.

Despite the lateness of the season, the amount of new building on the Coast is very large and the activity promises to continue as long as the weather permits. The summer has been somewhat cooler than usual in most sections and so very favorable to contractors. As was expected the building permits for August showed a falling off from the July record, but the totals average high and in most cases are higher than for August a year ago. July was an exceptionally good month, and the new work planned then will do much to keep construction firms busy late into the year. In San Francisco there is a big activity in building flats and apartment houses in all the districts close to the business center, and while suburban building operations show a tendency to fall off a little owing to the lateness of the season, the indications are that next spring there will be more building in the suburbs than ever. The real estate sales in outlying sections have been very heavy all summer. The building permits for San Francisco during the month of August totaled the sum of $1,950,502 as against $2,452,725 in July and a little over two million dollars in August, 1912. Now that definite announcements have been officially made by the World's Fair directors in regard to starting work on the Exposition buildings before the close of the year, it is likely that September will be an unusually good month in building permits. Oakland issued building permits in August to the amount of over $600,000, a creditable increase over the same month a year ago, but a falling off of $500,000 from July, 1912. Sacramento's August permits amounted to $115,391, or about half the sums for the preceding month and the same month a year ago. Los Angeles still holds up wonderfully in a building way, her permits for August being in the aggregate $3,212,007, or about $370,000 short of her July record and almost double her record for August, 1911. Portland had permits to the amount of $752,861 in August as against $898,977 in July and $411,700 for August, 1911. Seattle's August figures are $563,535, or about $100,600 short of her July record, and about half of her totals for August, 1911.

The Chamber of Commerce of San Francisco and other business men's organizations here are acting concertedly in advocating greater improvements for public comfort in the city. These bodies have communicated with the sanitary committee of the Board of Health urging the board to do its utmost toward having the city install convenience stations at prominent points in the business districts and sanitary drinking fountains at intervals along the principal streets. These improvements are highly necessary and have been urged upon the municipal authorities before without avail. It is probable that now some definite action will be taken by the Board of Supervisors. Frank Klimm, past president of the local master plumbers' association, has offered to assist in expediting matters by volunteering to install bubbling drinking fountains free of cost to the city if there was no appropriation available. This generous offer has been referred to the city fathers for consideration.

The heating and ventilating contract for the new Standard Oil Building at Bush and Sansome Streets has been awarded to J. E. O'Mara. Amount of contract, $17,920.

Lettich Bros. have been awarded the plumbing, heating and gasfitting contract on the seven-story building at Ellis and Larkin Streets, Jean Allec, owner. Amount of contract, $12,159.50.

Walter Meese, dealer in tools, builders' hardware, etc., has moved his establishment to 279 Twelfth Street, in Oakland.

The John G. Sutton Co. has been awarded the heating and ventilating contract on the Lux School of Industrial Training at Seventeenth and Hampshire Streets; amount, $6,500. Robert Dalziel, jr., was given the plumbing contract, which amounts to $4,857. This company has also been awarded the contract for the plumbing in the four-story and basement building at Bryant and Zoe Streets, Shreve & Co., owners; amount of contract, $9,136.

H. W. Finch, Pacific Coast manager for the J. M. Kohler Sons Co., leaves this week for a trip over his territory in the Northwest.

The plumbing and well boring business of the late Walter R. Smith, of Centerville, Cal., has been purchased by Frank Hurd and L. H. Eggers.

Mr. Jeffries, of the San Francisco establishment of the Mark-Lally Co., has just been appointed manager for the new Oakland branch of the company.

The California National Supply Co., of Los Angeles, has announced plans for a large fireproof addition to its warehouse at Holly and James Street.

The Wicked Angler.

"Tommy," said the visitor, "have you read the books in your Sunday-school library?"

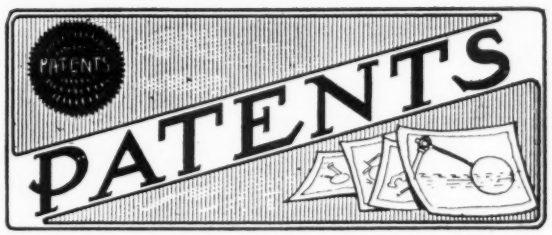
"Some of them," he replied, rather doubtfully.

"Can you tell me what happened to the boy who went fishing Sunday?"

"Yes. He caught three catfish and an eel."

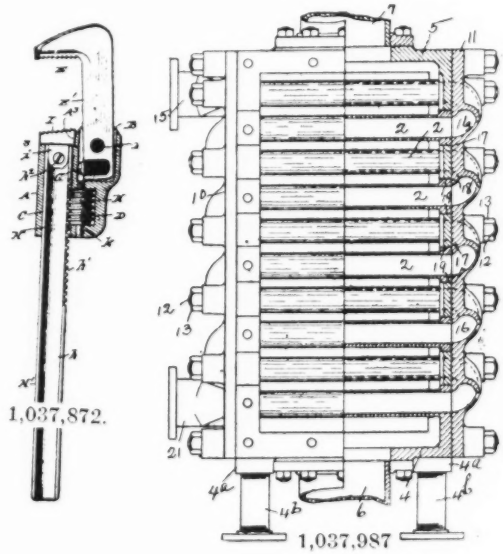
"How do you know that?"

"'Cos I was him."

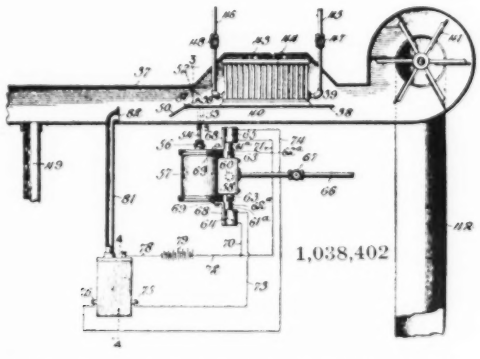


Heating Department.

1,037,872. Pipe-Wrench. Alfred J. Cooper, Duryea, Pa. A pipe-wrench embodying a head having two separate jaw sockets therein, one extending through the head longitudinally and the other being closed at the bottom and a transverse adjusting worm aperture through the head located in line with the closed bottom socket and opening at one side into the socket, an outer jaw having a straight shank at substantially right angles to the jaw face, said shank being pivotally mounted in the closed bottom on an axis substantially in the plane of the end



face of the other socket, a spring for holding the pivoted jaw advanced, a longitudinally movable jaw shank slidably mounted in said other socket, said shank being extended to form a handle and having longitudinal concavities in its opposite side faces and teeth on one of its edge faces, a jaw mounted on the end of the shank and having side lugs extending down into said concavities, a transverse pin connecting the lugs and shank, and an adjusting worm journaled in the transverse opening in the head and co-operating with said teeth to adjust the longitudinally movable shank and jaw.

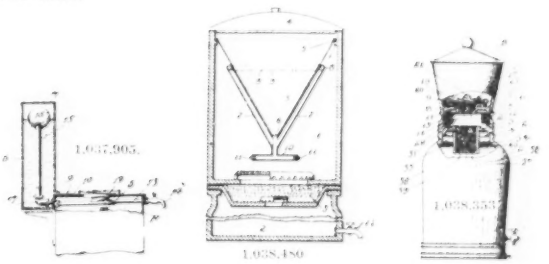


1,037,987. Heater. George E. Riblet, Erie, Pa. In a heater, the combination of a series of sections formed each with a cross tube with joint surfaced ends arranged one upon another; and covers for the ends having passages therein connecting the tubes of different sections, said passages having bridge pieces forming closures for the joint between the sections.

1,038,402. Temperature-Controlling Apparatus. Anderson MacPhee, New York, N. Y. A temperature controlling apparatus comprising hot and cold air ducts, a damper arranged to vary the relative volumes of air discharged from the said ducts, a motor connected with the damper and having a controlling valve provided with a projecting stem, thermostatically operated means for actuating the valve including a pair of solenoids co-acting with the valve stem, and means for automatically moving the valve to a central position to cut off the motive power and stop the damper at an intermediate point.

Plumbing Department.

1,037,905. Portable Hot-Water System. Fay C. Hayes, Altamont, N. Y. A portable water heater comprising a hot water tank adapted to be removably supported by a stove, and in which the level of the water may vary, a water circulating pipe projecting laterally from the base of the tank and having both ends in communication with the said tank, said pipe having its outer portion formed in a coil that is disposed so that the burner of the stove will heat the coil, a discharge pipe having one end projecting into the base portion of the tank, a movable inlet pipe within the tank, means for pivotally connecting one end of said inlet pipe to the discharge pipe, a controlling valve for said discharge pipe, and means for retaining the free end of the inlet pipe adjacent the level of the water in the tank.

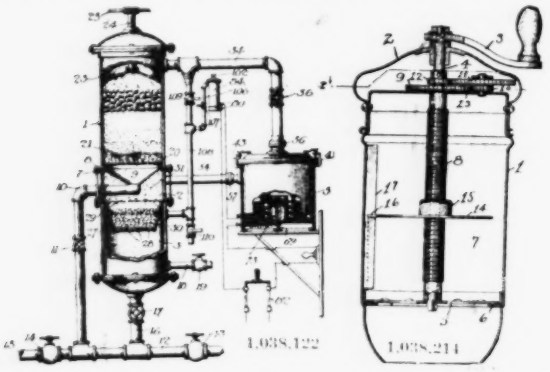


1,038,480. Water-Purifier. Emil Bergmann, Los Angeles, Cal., assignor to August J. Gulck, Los Angeles, Cal. In a water purifier, in combination with a water receptacle, a funnel, a tube leading downward from said funnel, a T on said tube, plugs in said T, branch tubes leading upward from said tube, a ring on said branch tubes and connected therewith, and perforations in said ring.

1,038,353. Water-Purifier. Virgil B. Hagg, Los Angeles, Cal., assignor to Continental Water Purifying Corporation, Los Angeles, Cal., a corporation of California. In a water purifier, the combination of a receiving tank having a perforated bottom, a porous medium at the bottom of said tank, a porous pressure plate resting on said medium and a member extending over said porous pressure plate and separated therefrom to allow passage of water to the pressure plate, said member being provided with means for retaining sediment settling thereon, said pressure plate being provided with a projection extending upwardly therefrom to engage the said member, whereby the weight of said member is brought on said pressure plate.

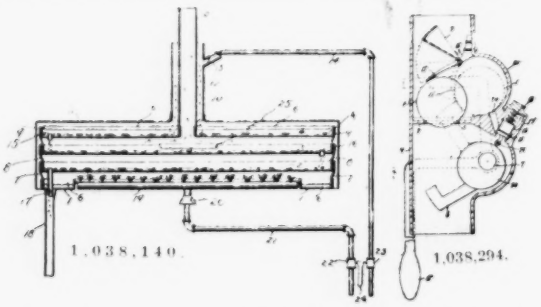
1,038,122. Electrolytic Water-Purifier. Virgil B. Hagg, Los Angeles, Cal., assignor to Continental Water Purifying Corporation, Los Angeles, Cal., a corporation of California. In a water purifier, a chamber containing two electrodes and wall means between said electrodes having perforations therethrough for passage of the electrolyte, said wall means being provided with projecting portions above said perforations, said chamber having a top member provided with a flange forming a part of said wall means, said wall means dividing the said chamber into inner and outer compartments and said top member being provided with inlet means within said flange and with outlet means at the outside of said flange.

1038,214. Soap-Dispensing Machine. George F. Shaver, New York, N. Y., assignor, by mesne assignments, to Granulator Soap Co., New York, N. Y. In a soap dispensing machine, in combination, a soap receptacle, a comminuting device, a shaft adapted to cause a relative rotative movement between said comminuting device and a cake of soap positioned in said receptacle, a hollow feeding shaft positioned on said first named shaft and adapted



to be operated therefrom by a train of gears, a train of gears operated by said first named shaft and adapted to operate said feeding shaft continuously, and a follower operated by said feeding shaft to feed soap to said comminuting device.

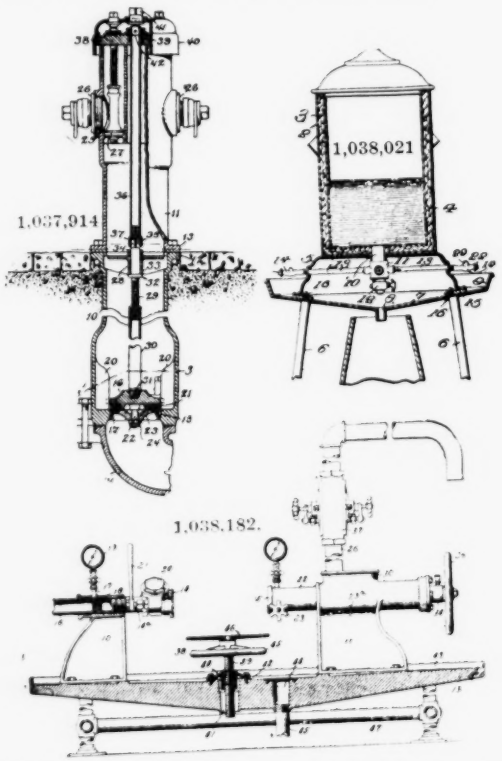
1,038,140. Instantaneous Water-Heater. Philip G. Hubert, Los Angeles, Cal.; Lily E. G. Hubert, executrix of said Philip G. Hubert, deceased, assignor to Lily E. G. Hubert, individually. In a water heater: the combination of a pan 1 for collecting leakage and moisture due to sweating; a discharge pipe 18 in the bottom of said pan; a gas burner 19 secured within a rectangular burner space in said pan 1; a pan 2 supported by aprons 7 above said pan 1; a tube 17 for discharging overflow from pan 2 into pipe 18; a double compartment pan 3 supported by aprons 8 above said pan 2; suitable overflow pipes 16 in said pan 3; a pan 4 supported by aprons 9 above said pan 3; suitable overflow pipes 15 in said pan 4; a suitable vent passing through said pan 4 adapted to carry off the burned gases; said aprons 7, 8, and 9 adapted to support said pans 2, 3 and 4 and also to direct leakage from either of said pans to the pan below; suitable removable sides 6 adapted to inclose the sides of said pans and direct leakage to the bottom pan 1; a suitable outer cover inclosing said pans; a jacket pipe connected with said cover and surrounding said vent pipe; and a suitable water supply tube for admitting water to said jacket.



1,038,294. Sanitary Flushing Apparatus. Edwin John Chilton, Kuripuni, Masterton, New Zealand, assignor to Chilton Flusher Company Limited, Auckland, New Zealand, a corporation of New Zealand. In a flushing apparatus, the combination of a casing or conduit, a valve normally closing the passage through the casing, a by-pass for conducting water about said valve, a supplemental valve normally closing the by-pass, a spindle provided with radially projecting means adapted to successively move said supplemental and mean valves from their seats as it is rotated, and means for turning the spindle.

1,037,914. Street Fire-Hydrant. Claude L. Howes, Boston, Mass. In a street fire hydrant, a barrel consisting of an upper exposed section and a lower concealed section, suitably connected at their meeting ends, said lower section having offset slots, a valve seat in the lower section, a valve movable in the lower section, a valve spindle, a spider as an abutment for the spindle and having arms removably arranged in said slots, and keys constructed to enter said slots for locking said arms therein.

1,038,021. Sanitary Drinking-Fountain. Arthur E. Summers, Mount Vernon, Ill. A drinking fountain of the character described, including a reservoir, a discharge nipple leading from the lower end of the reservoir and formed with a drain cock at its lower end, radially disposed discharge pipes leading from the said nipple above the drain cock and provided with discharging faucets at their ends, and a dished drainage pan disposed below the reservoir and spaced therefrom and extending out beyond the faucets, said pan having an upwardly extending marginal flange and a centrally disposed drainage opening beneath the lower end of the discharge nipple.



1,038,182. Fluid-Meter Tester. Philip Mueller, Decatur, Ill., assignor to H. Mueller Manufacturing Co., Decatur, Ill., a corporation of Illinois. A meter tester comprising a table, two heads supported on said table, one of said heads being movable toward and from the other, means for so moving said head, a supply pipe to one head, and a discharge leading from the other head, a water retaining wall around the sides of said table, means for supporting a meter between said heads and in connection therewith, said means comprising an upright member passing through the body of the table, and a mound surrounding said member and rising from the table a height substantially equal the height of said retaining wall.

Gentle Snooze.

"Hi! wake up, here! You can't sleep in this park."

"Can't, hey? I wuz sleepin' fine when you butted in. Everybody could sleep if youse fellers wouldn't talk so much about it. G'wan away an' lemme finish me millionaire dream."